

# The REFRIGERATION & AIRCONDITIONING Business

JANUARY 1961

EDITORIAL DEPT  
UNIVERSITY MICROFILMS  
313 NORTH ZEEB ST.  
ANN ARBOR MICH. 48106



A CONTRACTOR'S  
GUIDE TO 'SELLING'

Time To Check  
Your Lines:  
Should  
You Add?  
Change? Drop?

The magazine for the installing contractor-dealer of airconditioning  
and commercial and industrial refrigeration



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At Viking — one thing is certain — the customer's requirement is "king". Everything—men, machines and equipment—must step along to meet the schedule. And if it takes a Rolls Royce and executives in top hats to keep things moving, tube will be delivered on time. Viking is another word for "dependability".

**VIKING** copper tube co.  
CLEVELAND 10, OHIO



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**FIRST and ONLY**  
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**BLOCK DESICCANT**  
**FILTER-DRIER**  
to the  
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The one complete line of refrigerant controls: Thermostatic Expansion Valves Refrigerant Distributors Solenoid Valves  
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*Mr. A. D. K. says:*  
**To Protect the  
System and  
Yourself  
use the**

**A**  
ALCO  
**DK**  
DRI-KLEANER



THROW  
YOUR  
COMPRESSOR  
\*OUT!



### \*OUTSIDE, THAT IS!

KRAMER'S outdoor compressor is the only compressor designed to operate outdoors for any application under all temperatures and weather conditions.

Completely assembled, wired, tested and factory run-in, it arrives on the job ready to operate. Simple hookup eliminates costly installation and control adjustment time. Kramer's outdoor compressor ends waste of valuable indoor space.

WRITE FOR BULLETIN

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**OUTDOOR  
COMPRESSOR**

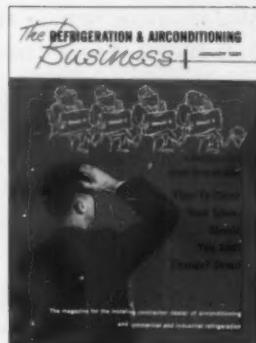
**KRAMER TRENTON CO. • Trenton 5, N. J.**

46 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

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JANUARY 1961/ THE REFRIGERATION & AIRCONDITIONING BUSINESS

reader's guide to



for January 1961

**COVER FEATURE:** What you know, or don't know, about your product lines can be very important at this time of the year. In a 6-city survey, our editors found that most contractor-dealers are guilty of not doing enough to prevent serious product line breakdowns.

## FEATURES

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Industry associations work together to solve common problems

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Check your product lines—they can make or break you!

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A simple telephone survey can pay big dividends for you, says George Webster

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... for this modern supermarket, bucking the industry trend

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Personality training and lessons in tact help these men get along with people

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Manufacturer checks both dealer and user reaction before starting production

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Here's a handy guide that tells you when and how to go about it

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• Published monthly and copyright 1961  
The Industrial Publishing Corporation  
Cleveland, Ohio. Volume 18, Number 1.

• Accepted as controlled circulation publication  
at St. Joseph, Michigan. Postmaster:  
Send form 3579 to Room 800, 812 Huron  
Road, Cleveland 15, Ohio. Printed in U.S.A.

THERE ARE LOTS OF REFRIGERATION DRIERS that control moisture, remove acid and filter solids . . . none of them do these things better than the ANSUL T-FLO DRIER. And . . . there's only one drier, the ANSUL T-FLO that can be replaced as quickly and easily as changing a light bulb . . . that offers the unique possibilities for manifolding . . . that can be connected directly to a moisture indicator without breaking the line. The ANSUL T-FLO DRIER was developed by refrigeration people with imagination . . . for refrigeration people with problems. They're available from refrigeration wholesalers everywhere.

**ANSUL**

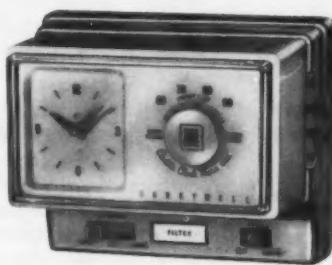
*ansul t-flo drier*



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Exclusive sales agents  
for UCON brand refrigerants,  
manufacturers of  
refrigeration products,  
fire extinguishing equipment  
and industrial chemicals.



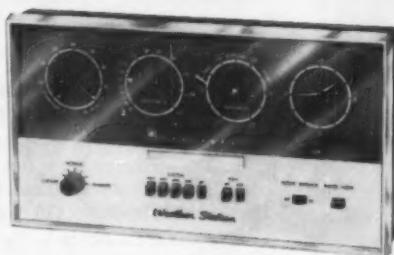
*On every service call . . .*

**SELL-UP to the Honeywell  
Electric Clock Thermostat**



*On every modernization job . . .*

**SELL-UP to the Honeywell  
Year-Round Thermostat**



*For all quality new construction . . .*

**SELL-UP to the Honeywell  
Weather Station**



*For all heat pump installations . . .*

**SELL-UP to the Honeywell  
Indoor-Outdoor Control System**

MAKE EVERY AIR CONDITIONING CALL PAY—

**Sell UP!**

**Honeywell**



*First in Control*

SINCE 1885

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THE REFRIGERATION & AIR CONDITIONING BUSINESS/JANUARY 1961

# BUSINESS *Briefs*

## Many New Products Expected at Show

A record turnout of new equipment is being rushed to completion by manufacturers exhibiting in the 15th International Heating & Air-Conditioning Exposition at Chicago Amphitheatre, Chicago, Ill., Feb. 13-16.

News of this revolutionary equipment is expected to swell attendance to record-breaking proportions, say exposition officials. The show is being sponsored by Ameri-

can Society of Heating, Refrigerating and Air-Conditioning Engineers in conjunction with its national meeting in Chicago.

More than 500 exhibits are scheduled. Displays will include equipment for commercial, institutional, industrial, and domestic applications, covering every phase of refrigeration, airconditioning, ventilation, and heating.

Material, parts, supplies, and tools used throughout the industry will also be on display.

New lines already scheduled include several roof-top airconditioners; a "Skyline" year-round airconditioner; a 10-ton unit for heating and cooling large areas with a roof unit, plus an unusual heating-cooling package for apartments and small commercial applications.

One line of o.e.m. equipment for refrigerating and airconditioning units includes shaded pole motors from 1500 hp to 1/6 hp; permanent split capacity motors rated to  $\frac{1}{2}$  hp; and blowers from 15 to 350 cfm at 0 static pressure.

Another line offers a completely new 5.5" airconditioning fan motor and electrically reversible 4.2" window fan motor.

A newly-patented anti-slug system has been incorporated in the latest model 5 hp airconditioning and heat pump compressor to be shown by a large manufacturer in the o.e.m. field.



indoctrination program for crewmen of the attack sub Thresher and for Navy instructors who will teach future crews.

In the demonstration, the petcock of the glass model (which contained a vacuum) was opened. The salt solution of lithium bromide in the bottom sphere (see photo) absorbs vapor from water in the upper end. Evaporation of water cools the remaining water from room temperature to 35 F.

The process may be reversed by holding the salt solution over an open flame to boil off absorbed water vapor.

### Booklet in Spanish

"Burned Up About Burnouts," a 21-page booklet by Evansville Div., Bendix-Westinghouse Automotive Air Brake Co., is now available in Spanish. It contains 57 pictures, portraying causes of motor compressor burnouts.

There's also an illustrated step-by-step procedure for replacing a burned-out motor compressor to eliminate repeat failures caused by a contaminated system.

### Ucon Offers Wholesalers Literature Display Rack

A counter display rack is being offered airconditioning and refrigeration wholesalers through Ansul Chemical Co., exclusive sales agent to wholesalers of Ucon refrigerants for Union Carbide Chemicals Co., Div. of Union Carbide Corp.

This rack, which may also be wall hung, provides wholesalers with a handy dispenser of valuable tips to customers on efficient, economical, and profitable operation of airconditioning and refrigeration systems.

Literature—technical data, equipment and service news—will be changed periodically.

### Marsh Has Warehouse On Eastern Seaboard

Extensive warehousing and distributing facilities have been completed by Marsh Instrument Co., Div. of Colorado Oil and Gas Corp., at Fort Lee, N.J., to service the eastern seaboard with a complete line of the firm's products. Address is 1209 Anderson Ave.

### Rosen Named President

Mel R. Rosen has been named president of Store Fixture Sales, Inc., Buffalo, N.Y., succeeding his late father, Max Rosen, who founded the firm in 1921. The new president moves up from general sales manager.

The company specializes in complete outfitting of supermarkets, delicatessens and meat markets, supplying them with refrigeration equipment and counters.

### Lehigh Picks Jamison To Sell Air Isolator

Jamison Cold Storage Door Co. has been named by Lehigh Mfg. Co. to handle sales, distribution, and service of its newly-developed air isolator. The equipment provides a curtain of moving air which

acts as an isolator, yet allows free access between areas of unequal air temperatures.

It forms an air barrier for warehouses, loading docks, controlled-humidity-rooms, and areas with odor, dust, and vapor problems.

### Fedders Picks Site

Rio de Janeiro, Brazil, has been selected by Fedders Corp. as one of two sites to be visited by its dealers under an incentive program this year. A second location has yet to be chosen.



**NO TUBES ARE USED** in the new Minneapolis-Honeywell transistorized amplifier for electronic temperature-control panels. Vacuum tubes have been replaced, thereby eliminating the biggest problem in such controls: reliability. C. M. Sanders of the firm's commercial division holds the compact version, a perfect duplicate in size, shape, and connections for the former model (on wall).

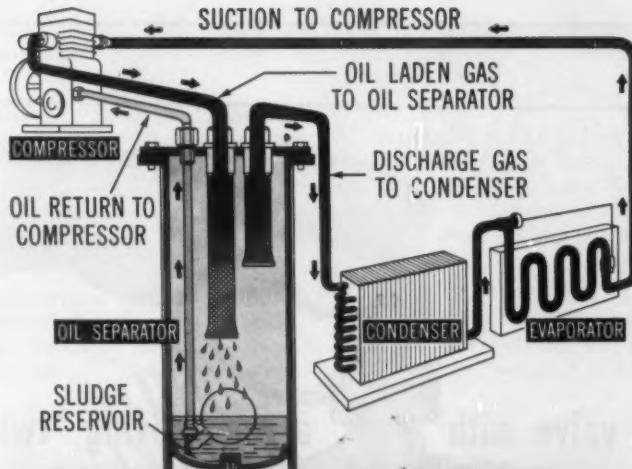
### MERGERS

Imperial Brass Mfg. Co., Niles, Ill., with Eastman Mfg. Co., Manitowoc, Wis., manufacturers of flexible and rigid hydraulic lines and fittings for farm, construction, and road building equipment.

Little Giant Pump Co., Tulsa, Okla., with Line Scale Co., Oklahoma City, manufacturers of valves and seats for reciprocating pumps in pipeline and refinery applications. New company: Little Giant Corp.

M & R Air Conditioning Corp., into Straus-Duparquet, Inc. M & R is manufacturer of kitchen equipment, furnishings, refrigeration and supplies for hotels, motels, supermarkets, bowling alleys, and institutions. S-D is an airconditioning

*Continued on page 9*



## Keep oil where it belongs...with a

# TEMPIRE OIL SEPARATOR

- 1 It is absolutely essential to completely lubricate all moving parts of the refrigeration compressor. Why risk the possibility of a burned out compressor due to loss of oil?
- 2 Constant clean oil lengthens compressor life. The oil return valve in a Temprite Oil Separator is located above the sludge reservoir...allowing the automatic return of clean oil to the compressor.
- 3 A sludge reservoir is provided in all Temprite Oil Separators to trap carbon, sludge and foreign substances, preventing their continued flow through the refrigerating system.
- 4 Keeping excess oil out of the condenser, liquid receiver, expansion valve and evaporator will increase refrigeration efficiency.



Temprite Oil Separator muffles sound.  
Capacities from  $\frac{1}{2}$  h.p. to 225 h.p.



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Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

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valve with  
a time-saving "twist"

lets you dial pressure limit to make

each A-P Model 209 a dozen valves in one

Virtually any thermostatic expansion valve you call for is likely to be "right in your parts kit" when you carry A-P Model 209's. They adapt in seconds to so many requirements — pressure limit is adjustable at *twist of dial* to the exact value called for by the compressor manufacturer. No need to waste time chasing makes and types when these superior valves give your customers the safest overload protection available!

Exclusive pressure-limit control *instantly* presets from 10 to 55\* gauge. Superheat setting can be varied from 2° to 20°F, if desired. Valve is designed to operate in any position, at any ambient temperature. Nominal capacities:  $\frac{1}{4}$  through  $1\frac{1}{2}$  tons R-12 . . .  $\frac{1}{4}$  through 3 tons R-22. Inlet connection sizes:  $\frac{1}{4}$ -inch SAE, or  $\frac{3}{8} \times \frac{1}{4}$ -inch SAE. Ask for Model 209 valves at your A-P Controls wholesaler.

**Model 207** thermostatic expansion valves offer outstanding advantages and quality recognized throughout industry. Performance similar to Model 209 valves, but without adjustable pressure limit. Can be furnished externally equalized. Choice of charges for different needs.



**CONTROLS COMPANY**



*Creative Controls for industry*  
**OF AMERICA**

HEATING AND AIR CONDITIONING DIVISION

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# BUSINESS *Briefs*

contractor. New name: M & R Air Conditioning Corp., Div. of Straus-Duparquet, Inc.

Acquisition of Rochester Mfg. Co., Inc., Rochester, N.Y., by American Radiator & Standard Sanitary Corp., New York. The Rochester company, to be operated as part of American-Standard's Detroit Controls Div., is leading producer of liquid level, pressure and temperature indication gages and instruments.

## SALES FIGURES

Trane Co. reports increases in sales and profits for third quarter of 1960. Sales were \$27,246,160; profits, \$1,900,412.

Air Reduction Co., Inc. reports record \$155,448,564 sales for nine-month period ending Sept. 30, 1960. This is \$43 million more than in the same period of 1959, previous record high.

Acme Industries Co. net sales exceed \$10 million for first time in firm's history. Sales volume for fiscal year ending July 31, 1960, was \$10,147,259.

Revere Copper and Brass Inc. reports net income for first nine months of 1960 at \$5,246,514, about \$2.4 million less than similar period in 1959.

## EXPANSIONS

General Air Products Corp. is doubling its present facilities by moving into a 50,000-sq.ft. building in Stirling, N.J. The firm moves from Cedar Grove, N.J.

York Div., Borg-Warner Corp. plans a new 177,000-sq.ft. warehouse at its Grantley Road plant, York, Pa. It is designed to better control shipping and storage and eliminate transportation to and

from rented areas in the city. Completion date: early spring, 1961.

Emerson Radio & Phonograph Corp. leases a newly-constructed single-story plant in Woodbridge, N.J., to house its airconditioner laboratory, engineering, and manufacturing operations.

Robertshaw-Fulton Controls Co. purchases six acres near Richmond, Va., for new, 2-story corporate headquarters. Construction starts

late this spring or early this summer. Completion is expected by summer, 1962.

Trane Co. breaks ground for its \$1.5 million plant at Kearns, Utah, a suburb of Salt Lake City, to provide better service for the firm's western market. Completion date: Feb. 1, 1961.

Korfund Co. Inc. moves into new quarters in Westbury, N.Y. (Long  
Continued on page 10



**Speed Service and Get a Cleaner, Drier System!**

**KINNEY**

## PORTABLE HIGH VACUUM PUMPS—

A better job—faster . . . that means completely satisfied customers and more service per man per day. It also means that with modern equipment your service operations turn in the profits you're now losing.

These KINNEY Portable units enable you to LEAK TEST . . . EVACUATE . . . DEHYDRATE Freon Refrigerating and Air Conditioning Systems in the shop or on location. The KC-3R, displacing 3 cfm at 1135 rpm, is especially suited to systems of 10 tons or less. The KC-8R, with free air displacement of 8 cfm at 1000 rpm, is the Pump for systems exceeding 10 tons. Each of these KINNEY Pumps includes: Bourdon type Vacuum Gage, automatic Vacuum breaker in case of power failure, male fitting for connecting to copper tube suction line, 10 ft. plug-in cord and snap switch and carrier handle.

**KINNEY VACUUM DIVISION  
THE NEW YORK AIR BRAKE COMPANY**

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Please send me Bulletin 4570.1 describing KINNEY Portable High Vacuum Refrigeration Service Pumps.

Write for Bulletin  
No. 4570.1 and price  
information today!

Name \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

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## BUSINESS Briefs

Island) All manufacturing, engineering, sales, and administrative departments are consolidated under one roof. There will be 34,000 sq.ft. of factory and office space.

**Bohn Aluminum & Brass Corp.** plans to increase total plant area by 20% at its Danville, Ill., Div. Additions are also planned for the

corporation's Butler, Ind., and South Haven, Mich., plants.

### ASSOCIATIONS

R. K. Serfass, manager of Westinghouse Electric Corp.'s air-conditioning division, was elected president of Air-Conditioning and Refrigeration Institute at its annual meeting Nov. 18-22 at Hollywood Beach, Fla.

F. J. Kreissl, president, Detroit Controls Div. of American Radia-

tor and Standard Sanitary Corp., was elected a vice president. Two other vice presidents were re-elected: Russell Gray, vice president, Carrier Corp.; and L. N. Hunter, director of engineering, Crane Co.'s plumbing, heating and air-conditioning group.

W. H. Aubrey, president, Frick Co., was re-elected treasurer.

Major emphasis at the convention centered on product certification, service training, and promotion.

Results of a survey made last summer indicate that the unitary air-conditioner certification program, though less than two years old, is fast becoming a potent selling tool. Of 107 contractor-dealers queried in 21 cities, 74% indicated that they were familiar with the certification program and 45% reported they used certification as a sales aid.

Some 90% of all unitary airconditioners produced are now in-



### FIND IT WITH Trace

An inexpensive fluid additive that "SPOTS" the smallest leaks with a brightly colored indicator seen through ice or frost.

### FIX IT WITH Leak Lock

The joint sealer that seals when other compounds fail. Leaklock is easy to apply directly from its squeeze tube container, and stays put on any clean surface. It's permanently flexible to defeat vibration and expansion—never dries out or cracks, yet may be easily removed with alcohol, and can't "freeze" joints.

### FORGET IT WITH CONFIDENCE

Leaklock and Trace are absolutely inert to Refrigeration systems...can't harm or be harmed by any refrigerant. Systems checked with Trace and sealed with Leaklock don't require expensive call-backs, and are saving time and trouble for thousands of contractors and servicemen every day.

See your Refrigeration Wholesaler For Trace and Leaklock or Write For Free Samples

### HIGHSIDE CHEMICALS INC.

4 COLFAX AVENUE • CLIFTON, N. J.  
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RAY SERFASS (right), newly-elected president of ARI, presents distinguished service award to retiring president Rudy Berg.

corporated in the certification program, it was reported.

With a pilot operation already in effect, the training committee of ARI's unitary air-conditioner section hopes to expand its training program into a dozen or more public school systems by the beginning of the 1961-62 school year. Ultimate goal is a packaged training course in refrigeration and air-conditioning service that will be usable in high schools and vocational schools throughout the country.

Chairman of this committee, named last spring to develop programs aimed at increasing the supply of qualified service and installation personnel, is A. E. Meling, director of service, Carrier Air-Conditioning Co.

*Continued on page 73*

# ONLY SQUARE D STARTERS WITH ONE-PIECE OVERLOAD RELAYS GIVE ABSOLUTE PROTECTION!

• Only Square D makes thermal overload relays with 1-piece construction—and only with 1-piece construction can you know you've installed the heater correctly. Square D 1-piece overload relays can be installed only one way. They are factory-assembled, individually tested and calibrated, completely tamper-proof. Repeated tripping will not affect accuracy.

You pay for overload protection—be sure you get it. Insist on Square D 1-piece overload relays for absolute protection.

EXCLUSIVE—  
1-piece Overload Relay  
for ABSOLUTE Protection!

Mail coupon  
today  
for simple  
"jig-saw"  
demonstrator  
—see why only  
Square D  
gives absolute  
protection



Square D Company  
Department SA-220  
4041 North Richards Street  
Milwaukee 12, Wisconsin

Please send me information on Square D  
magnetic starters, along with your simple  
3-minute "jig-saw" demonstrator

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COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_



**SQUARE D COMPANY**

wherever electricity is distributed and controlled

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Your  
**WATER**  
CONDITIONING  
IS  
**OK**  
WITH  
**S-K**  
PREVENTIVE  
MAINTENANCE

Prevent clogging deposits . . .  
caused by scale and corrosion . . .  
on your water-using equipment.  
With Stiles-Karlsonite products  
for *assured preventive maintenance* . . .  
your water is always  
crystal clear . . . tasteless . . .  
non-toxic.

Easily installed . . . Stiles-Karlsonite dispensers automatically feed Karlsonite into water systems. No moving parts . . . *minimum maintenance*.

Today . . .  
write for  
new 24-page  
brochure.

STILES-KARLSONITE CORPORATION

Dept. SKB Waukegan, Illinois

INSULATION  
INSTALLATIONS  
FASTER - EASIER - COST LESS!

Anchors by

**Stic-Klip®**

Stic-Klip® are time and labor saving anchors and fasteners for attaching insulation, strapping, metal lath, wall fixtures, wiring and conduit to curved or flat metal or masonry surfaces. Stic-Klip® feature no surface drilling, quick fastening, no fire hazard and a strong positive bond. Send for free illustrated folder.

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12

## USEFUL Literature

**CRYSTAL-CLEAR WATER** and its conditioning are described in a brochure released by Stiles-Karlsonite Corp. It tells how to secure non-corrosive, non-clogging, and non-precipitating water at lowest cost by avoiding scale, corrosion, algae, and slime. Use of chemicals as water conditioners for various equipment is given in addition to water testing instructions, water data and conversion tables.

circle 76 on reader service card

**AIR RECEIVERS** for truck-mounted compressors are described and illustrated in a new pamphlet issued by Kargard Co. There are dimension tables for receivers in vertical, horizontal, and portable sizes from 3- to 120-gallon capacity.

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**OFFERED IN ENGLISH AND SPANISH** is a 4 x 7" pocket-size catalog issued by All-State Welding Alloys Co., Inc., on welding, brazing, and soldering alloy and flux. Charts and tables summarize selection of alloy-cast iron, nickel silver, copper, aluminum, silver, or steel. Products are indexed by major metal use. Gives hints, composition, and data on automatic and semi-automatic welding wire.

circle 78 on reader service card

**THREE TYPES** of vertical split case single-stage pumps are publicized in Bulletin 105-V, issued by Aurora Pump Div., New York Air Brake Co. Product photo, parts list, dimensions, and typical applications are given.

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**CLIMATE FOR LEARNING** is necessary for school children, say two booklets published by Barber-Colman Co. In pamphlet F-9767, unit ventilator control systems for face and by-pass units in schoolrooms are discussed. The second release, F-9797, deals with valve-controlled unit ventilators utilizing the company's package controls.

circle 80 on reader service card

**WATER-COOLED CONDENSERS** that are mechanically cleanable are discussed in Halstead & Mitchell Co.'s Bulletin WC-300. Charts show water consumption and pressure drops for various models. Includes photos, schematic drawings, and advantages of five series of condensers.

circle 81 on reader service card

**TEAMING UP** to produce Bulletin AC-100 are Kennard and Herman Nelson divisions of American Air Filter Co., Inc. The new publication is on the firm's airconditioning units. Contents include types of equipment, conditioning requirements, physical sizes, coil performances, humidification, temperature control, and air cleanliness. Sections on accessories, fan and motor requirements, and installation details are included with illustrations.

circle 82 on reader service card

**30 PAGES OF CAPACITY TABLES** for standard air conditions are one of the main features of a 60-page bulletin (No. A-1103) now available from American-Standard Industrial Div. There also are features on a new line of airfoil bladed fans,

*Continued on page 65*

JANUARY 1961/THE REFRIGERATION & AIRCONDITIONING BUSINESS

LOW-COST, EASY TO INSTALL, EASY TO SERVICE LINE

by *Tenney*

for Back Bars, Reach-Ins,  
Direct-Draw Bars,  
Under-Counters, Low Boys



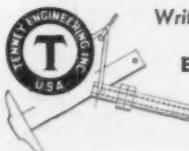
## TENNEY all-new, all-aluminum mx unit coolers

From 900 to 54,000 BTU

- RUSTPROOF, LIGHTWEIGHT ALUMINUM CASE
- COIL CONSTRUCTION completely non-ferrous
- MINIMUM PRESSURE DROP CIRCUITING, conservative ratings
- AMPLE ROOM FOR TX VALVE
- EASY TO INSTALL, keyhole slotted hangers on unit

- FACTORY ASSEMBLED unit hangers, drain fittings
- 2-WAY MOUNTING standard factory equipment on MX-9 through 17
- QUIET, EFFICIENT fan and motor combinations
- LIFE LUBRICATED standard motors; easily replaced in field

Write for Bulletin 118-58



Engineers and Manufacturers  
of Refrigeration and  
Environmental Equipment

1090 SPRINGFIELD ROAD, UNION, NEW JERSEY

• PLANTS: UNION, NEW JERSEY AND WILMINGTON, NORTH CAROLINA

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*Tenney*  
ENGINEERING, INC.



Easily-installed PPG Neoprene-coated Duct Liner now meets fire requirements, provides extra margin of safety on ductwork installations.

## NOW—PPG Fiber Glass Duct Liner Carries the UL Label

**PPG Neoprene-Coated Superfine Duct Liner Meets All Requirements of NBFU Bulletins No. 90-A and 90-B for Ducts**

### YOUR ASSURANCE OF SAFETY

PPG is proud to announce that its Neoprene-coated Superfine Fiber Glass Duct Liner has been thoroughly tested according to the condition determined by National Board of Fire Underwriters, and has met the Board's rigid safety requirements in compliance with Bulletins No. 90-A and 90-B for ducts. It now bears the label of the Underwriter's Laboratories, Inc.

For you, this means that PPG Neoprene-coated Fiber Glass Duct Liner meets fire requirements and provides that extra margin of safety on any duct-work installation.

### PLUS ALL THOSE EXTRA PPG ADVANTAGES...

...such as lightweight, easy handling, easy cutting and piecing, low wastage, fast installation, fine acoustical qualities, good thermal barrier characteristics, low resistance to air flow, no air erosion; and lifetime service, because it won't rot or decay, is not affected by humidity or dryness.

Give PPG Fiber Glass Duct Liner a try. It offers you a combination of top-flight insulation and economy. For full information, call your nearest PPG Fiber Glass Sales Office, or write *Pittsburgh Plate Glass Company, Fiber Glass Division, One Gateway Center, Pittsburgh 22, Pennsylvania*.

Sales Offices: Atlanta, Boston, Buffalo, Charlotte, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, Fort Wayne, Houston, Jacksonville, Kansas City, Los Angeles, Louisville, Milwaukee, Minneapolis, New Orleans, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco, Seattle and Washington.



PITTSBURGH PLATE GLASS COMPANY

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## pumps for air conditioning

### homes, hotels and haciendas

Today, you can get a modern, dependable Ingersoll-Rand pump to meet the requirements for air-conditioning installations of any size. In small homes, large homes, hotels, buildings and institutions—regardless of tonnage or head—I-R pumps have proven their economy through low-cost, trouble-free operation. Check with Ingersoll-Rand today. See how easy it is to get a pump that meets your needs exactly!

a century

1860 - 1960



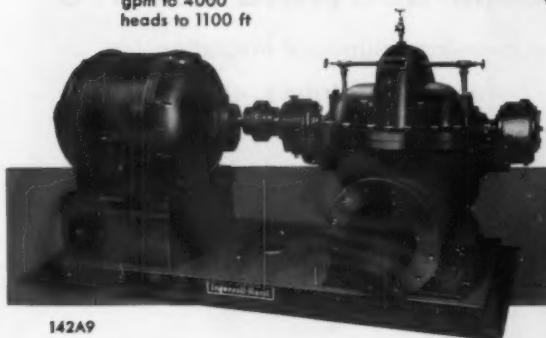
of pump progress

from the leading manufacturer . . .

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gpm to 4000  
heads to 1100 ft



OTHER I-R PUMPS FOR  
AIR-CONDITIONING SERVICE



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Motorpumps



"RV" Line  
Motorpumps



Cradle-Mounted  
Pumps

142A9

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**SUPER-DRY REFRIGERANTS**

*featuring* new hermetic burnout testing procedure—a unique method of cleaning systems with minor burnouts.

**genetron®**

**URETHANE FOAM-BLOWING AGENTS**

*featuring* advantages in making superior insulation for refrigerators, freezer boxes, "reefer" trucks, etc.

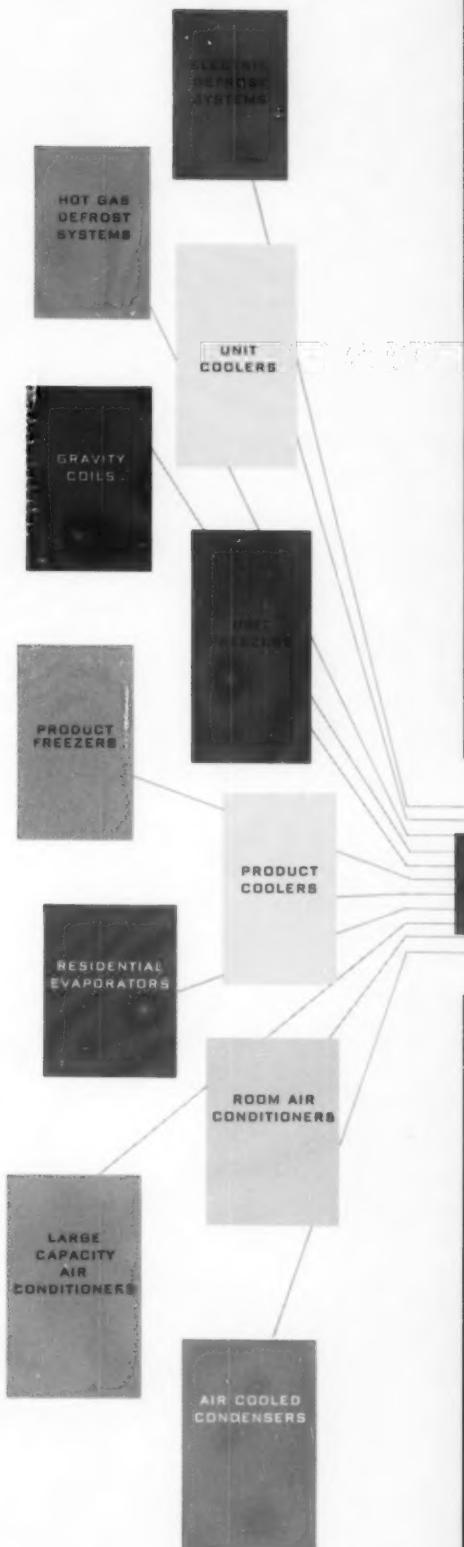
**Allied  
Chemical**

**GENERAL CHEMICAL DIVISION**  
40 Rector Street, New York 6, N.Y.

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16

circle 34 ►



you know  
the quality...  
now look at  
the depth  
of this

LINE OF  
*McQuay*

# REFRIGERATION

PRODUCTS

McQuay  
Means Quality



SEE YOUR WHOLESALER FOR THE  
COMPLETE McQUAY CATALOG

## AUTOMATIC DEFROSTING SYSTEMS

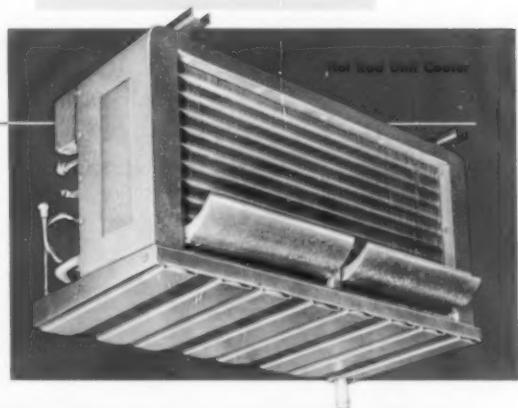
### HOT GAS SYSTEMS

Three complete McQuay systems are available. The Zero-frost System is designed using the re-evaporation principle, the Thermex® System utilizing the accumulator principle and the Heat Pump System with reverse cycle defrosting. All three systems are designed to deliver fast, sure defrosting with simple maintenance and complete compressor protection. Low temperature unit coolers are manufactured with durable hammered aluminum casings.



### ELECTRIC SYSTEMS

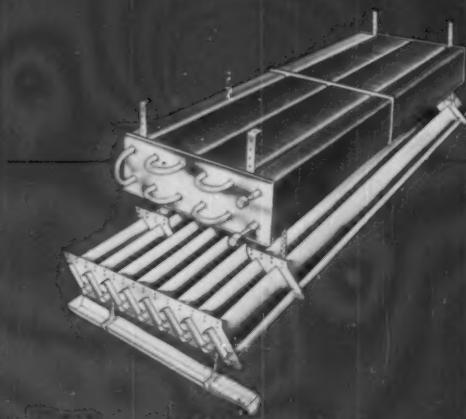
The McQuay Hot Rod Electric Defrost System is safe, dependable, foolproof and exceptionally easy to install and maintain. Constructed with durable hammered aluminum casings and equipped with built-in heat exchangers. Eight sizes available from 3,000 Btu/hr to 32,000 Btu/hr at 10° T.D.



### UNIT COOLERS

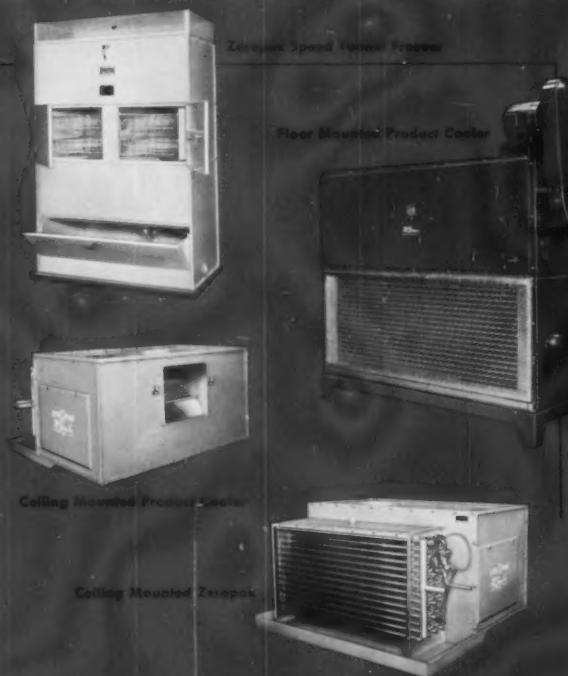
There is a McQuay Unit Cooler to fill the needs of every application. Five styles, all in hammered aluminum casings available in 42 varied sizes, offer a complete selection of the exact model and size for every job.





#### GRAVITY COILS

McQuay Gravity Coils, engineered for walk-in coolers and refrigerators, consist of a fin coil with  $\frac{1}{8}$ " or  $\frac{1}{2}$ " fin spacing and an aluminum louvered baffle and drain pan.



#### PRODUCT FREEZERS and COOLERS

McQuay Zeropak speed tunnel freezers and ceiling mounted Zeropaks are designed for all types of low temperature storage and product sharp freezing. Capacities range from 10,300 to 30,000 Btu/hr at 10° T.D. in the four speed tunnel models and 12,000 to 90,000 Btu/hr at 10° T.D. in the six ceiling mounted models. The floor and ceiling mounted product coolers for above 35° F. applications vary in capacities from 12,350 to 197,500 Btu/hr at 10° T.D., depending on model selected and number of rows of coil.

#### THERE IS A MCQUAY PRODUCT FOR EVERY REFRIGERATION NEED



Horizontal Air Flow Aircon



Vertical Air Flow Aircon

#### AIR COOLED CONDENSERS

McQuay Aircons are available with either horizontal or vertical air flow design in thirteen single unit sizes having nominal capacities ranging from  $7\frac{1}{2}$  to 8 tons. Condenser circuits can be split to handle multiple compressor applications. McQuay "Seasontrol" available for positive year 'round head pressure control.

## SEASONMAKER AIR CONDITIONERS

### SINGLE ROOM UNITS

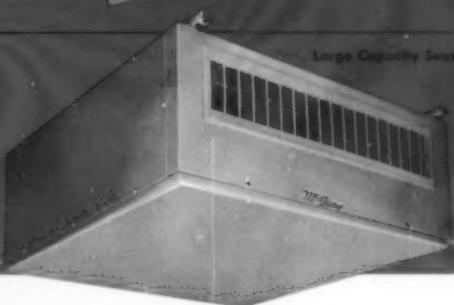
Direct expansion remote type individual room air conditioners available in four styles. Models range from  $\frac{1}{2}$  ton to  $1\frac{1}{2}$  tons capacity in each style. Floor and ceiling models range from 220 to 640 cfm with slow speed centrifugal fans for extra quiet operation.



Ceiling Seasonmaker



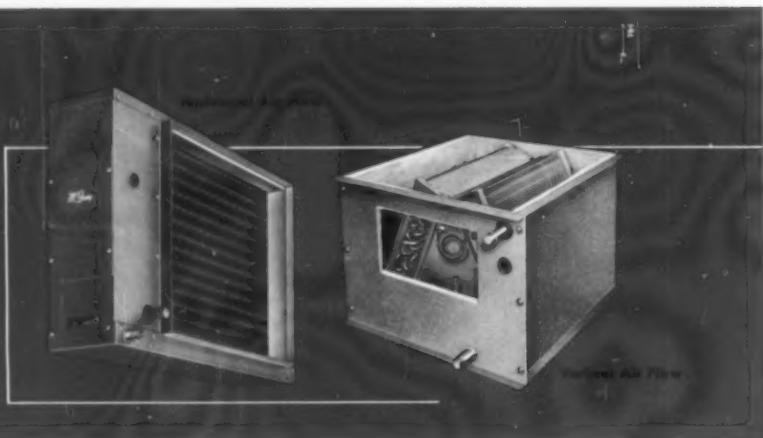
Floor Seasonmaker



Large Capacity Seasonmaker

### LARGE CAPACITY SEASONMAKERS

McQuay large capacity Seasonmakers are direct expansion remote type ceiling suspended air conditioners from 2 tons to 10 tons capacity. Available in four direct drive and ten belt driven models for free air discharge and duct applications. Heavy duty continuous galvanized steel casings with baked on enamel finish.



### RESIDENTIAL EVAPORATORS

A wide range of vertical and horizontal air flow McQuay residential evaporators, all with hammered aluminum casings. Available in 2-3-4-5 and  $7\frac{1}{2}$  ton sizes to fill the needs of every home in any climate. Capacities range from 24,800 Btu/hr to 92,100 Btu/hr.

SEE YOUR WHOLESALER FOR THE  
COMPLETE McQUAY CATALOG

McQUAY, INC., 1600 Broadway N. E., Minneapolis 13, Minnesota

**M<sup>c</sup>Quay**  
means Quality

***m<sup>c</sup>Quay***  
INC.

AIR CONDITIONING • HEATING • REFRIGERATION

DM-1961-1



how do distributors rate **NOR-LAKE** refrigeration products?

66

# NOR-LAKE GETS A's IN SCHOOL SALES!



99

... says J. A. Kolbe, of John G. Kolbe Company, Richmond, Va.

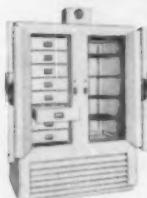
"It's much easier to sell dollar-conscious schools when our product has both variety and quality—like NOR-LAKE. NOR-LAKE'S quality line means selling flexibility—allows us to compete for sales effectively in both institutional and commercial fields.

"Then too, NOR-LAKE'S 'Fine-Line' appearance is backed up by rugged design based on years of refrigeration experience. Our success in the school market—where NOR-LAKE'S ruggedness and reliability is so important—has returned double dividends to us. Our experience shows that NOR-LAKE means savings in time, trouble and service calls. We get satisfied customers (the most important sales asset for any dealer).

"Now you know why we feel NOR-LAKE products rate A's for quality sales. Naturally Kolbe Company is proud to display and sell NOR-LAKE'S line of refrigeration products, and we expect to continue this pleasant association for many more years."

*\*John G. Kolbe Company is one of the South's largest suppliers of equipment for schools, hotels, and restaurants.*

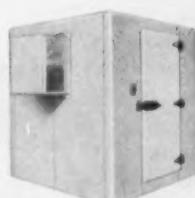
## NOR-LAKE'S "FINE-LINE" IS A FULL LINE



biological refrigerators



refrigerators



walk-ins



freezer-refrigerator  
combinations



freezers



bottle coolers



ice cube makers

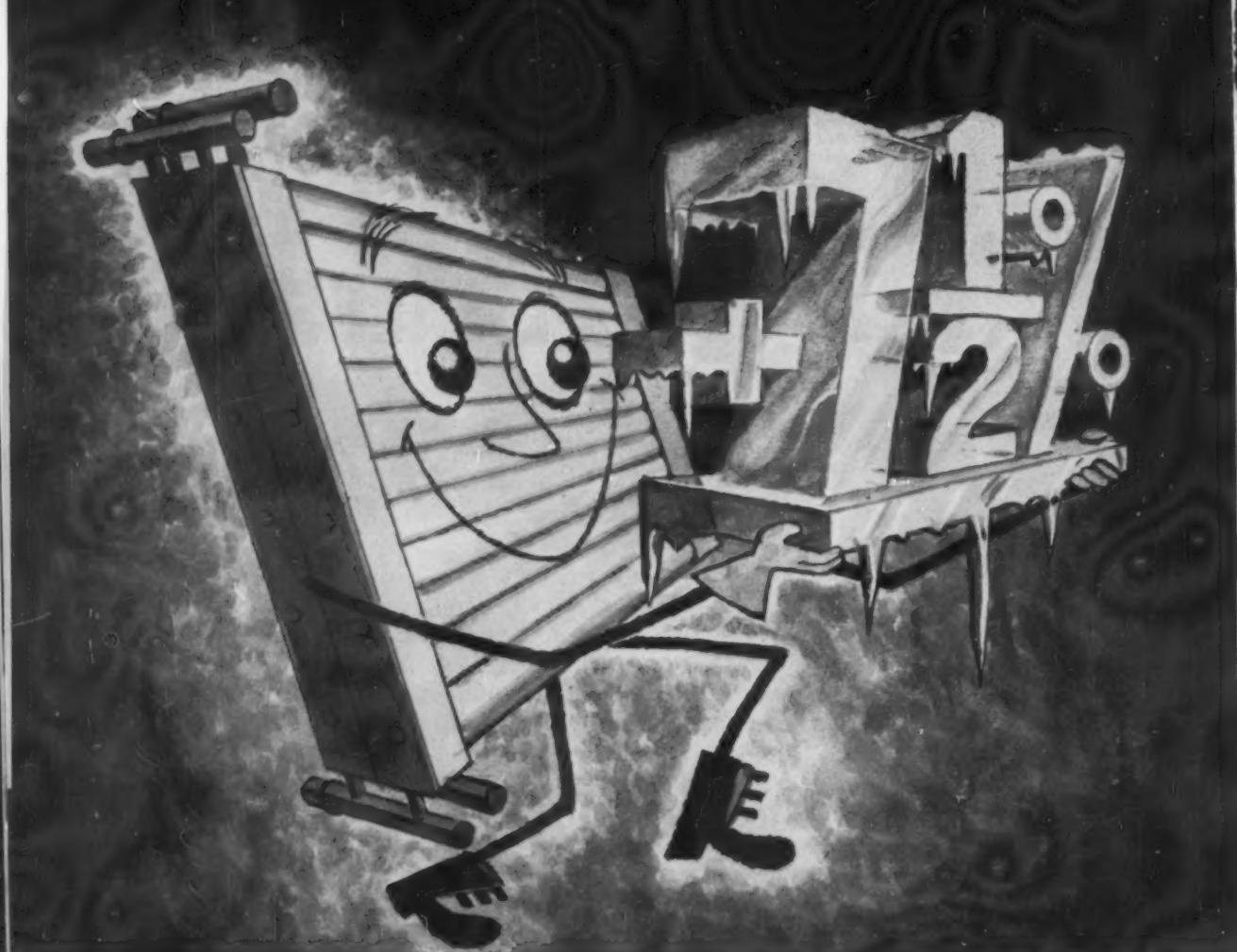


direct draws

Write today for information concerning NOR-LAKE sales opportunities in your area.



**NOR-LAKE, inc.**  
Second & Elm,  
Hudson, Wisconsin,  
Dept. 205



## Want a 7½% increase in refrigeration capacity for the same horsepower?

*Use Halstead & Mitchell cleanable water-cooled condensers*

Test results indicate an average of 15 degrees of subcooling in H&M condensers because of true counterflow of refrigerant and water. Since liquid refrigerant leaves the condenser at a lower temperature, system capacity is increased about ½% for each degree of subcooling—without additional power input.

But that's not all: Halstead & Mitchell Water-Cooled Condensers have easily removable end plates for quick, safe, *mechanical* cleaning of the water passages. Scale and sludge are quickly removed so that condenser efficiency stays high; operating costs, low.

Featuring double-tube design, seamless copper tubing and brass headers, H&M condensers are available in  $\frac{1}{2}$  to 25-ton capacities. All are U/L approved, and can be used singly or in multiples on racks. Ask your H&M refrigeration wholesaler for complete information, or write Halstead & Mitchell Co., Bessmer Building, Pittsburgh 22, Pa.

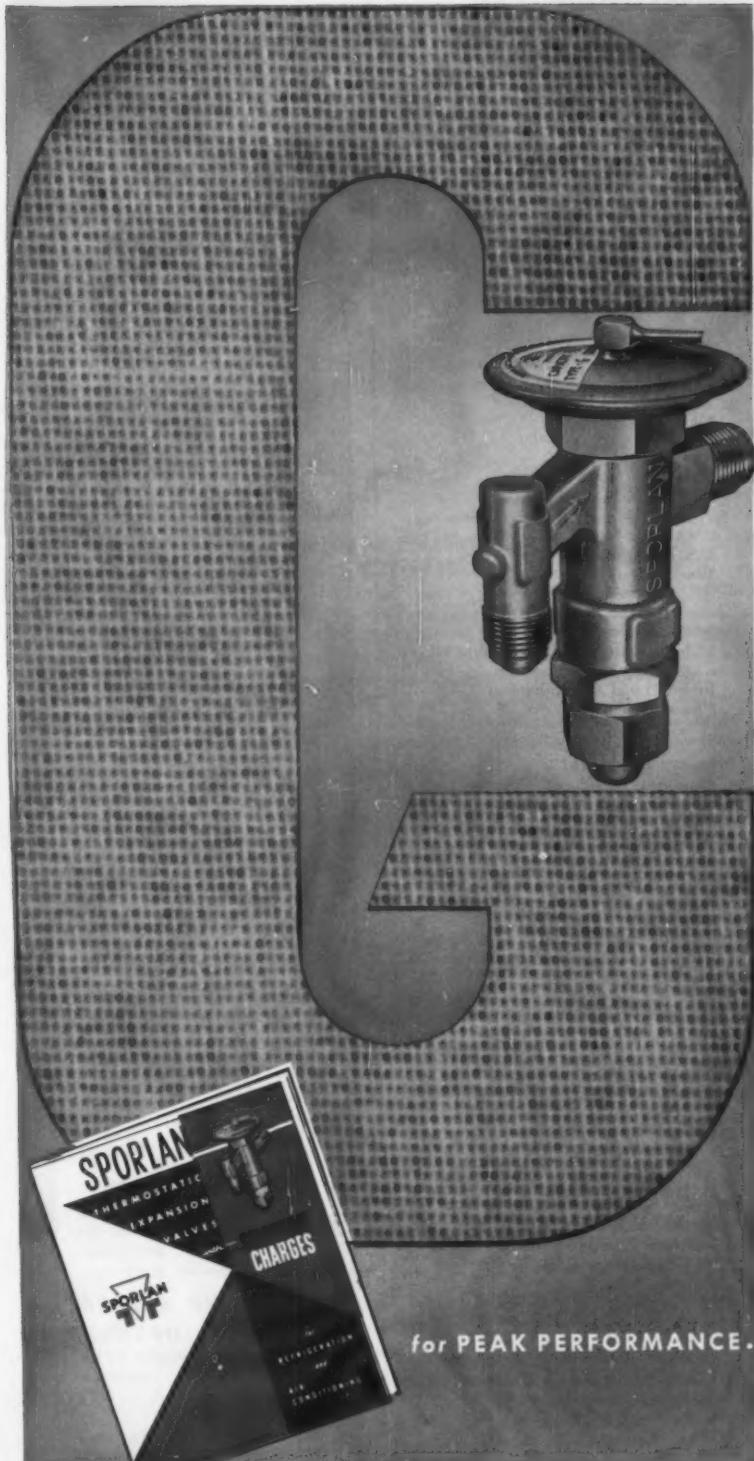


H & M WATER-COOLED CONDENSER  
WITH TRUE COUNTERFLOW

**HM**  
*Halstead & Mitchell*

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Air Handlers • Finned Coils • Air-Cooled Condensers • Cooling Towers • Water-Cooled Condensers



**SPORLAN**  
**TV**  
**G VALVES...**

the No. 1 choice for  
 Refrigerated Cases,

utilize

**SPORLAN**  
**SELECTIVE CHARGES...**

famous since 1934

**SPORLAN**  
**"C" CHARGE**

for Suction Temperatures  
 Above ZERO

**SPORLAN**  
**"Z" CHARGE**

for Suction Temperatures  
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**SPORLAN**  
**"X" CHARGE**

for Extremely Low Temperatures

More engineering features  
 are incorporated in the  
 Sporlan G valve  
 than in any other valve...  
 yet the basic design has  
 always been sound...  
 and has never been changed.

Modifications will always be  
 made, but only to improve the  
 valve... never to change it.

...on all refrigeration applications,  
 send for new bulletin 10-10 today  
 ...then order your G valves from  
 your friendly Sporlan Wholesaler.

**SPORLAN VALVE COMPANY**

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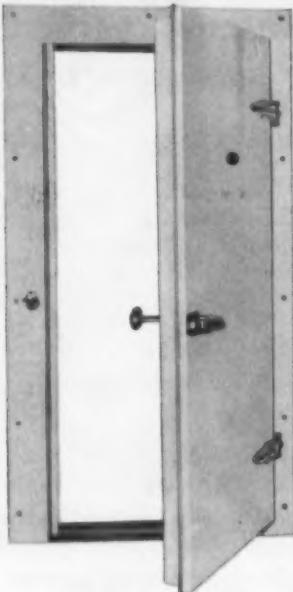
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THE REFRIGERATION & AIRCONDITIONING BUSINESS/JANUARY 1961

## Introducing

# VIROQUA fiberglass COOLER DOORS

Formerly Walker Doors



**MOLDED FIBERGLASS CONSTRUCTION**  
seals moisture out.  
**NO RUST OR WARPING**  
can't corrode or wear.  
**LIGHT IN WEIGHT**  
less than one-third other doors.  
**NO PAINT, NO UPKEEP**  
cuts maintenance cost.  
**COMPETITIVELY PRICED**  
costs no more for the best.  
**MANY MODELS AND SIZES**  
cooler, freezer and reach-in doors.

Molded fiberglass cooler and freezer doors designed to fit today's refrigeration needs. A truly revolutionary product development. Write today for literature.

SELECT DISTRIBUTOR TERRITORIES OPEN. WRITE  
FOR COMPLETE INFORMATION

**Viroqua Doors**  
Viroqua, Wisconsin  
circle 58 on reader service card

24

## BUSINESS

# Calendar

**January 29-February 2, 1961**

National Association of Home  
Builders (Annual Convention &  
Exposition)  
Exposition Center  
Chicago, Ill.

**February 11-12, 1961**

Air Conditioning & Refrigeration  
Wholesalers (Annual Meeting)  
Pick-Congress Hotel  
Chicago, Ill.

**February 13-15, 1961**

Refrigerated and Frozen Products  
Research and Advisory Committee  
(Annual Meeting)  
U.S. Department of Agriculture  
Washington, D.C.

**February 13-16, 1961**

15th International Heating & Air-Conditioning  
Exposition  
International Amphitheatre  
Chicago, Ill.

**February 13-16, 1961**

American Society of Heating, Refrigerating  
and Air-Conditioning Engineers (Semi-Annual Meeting)  
Conrad Hilton Hotel  
Chicago, Ill.

**March 27-30, 1961**

National Association of Refrigerated  
Warehouses and Refrigeration Research  
Foundation  
Mark Hopkins Hotel  
San Francisco, Calif.

**April 23-26, 1961**

Oil Heat Institute of America (Annual  
Convention)  
Statler-Hilton Hotel  
Washington, D.C.

**June 12-16, 1961**

Institute of Boiler and Radiator Manufacturers (Annual Meeting)  
Seaview Country Club  
Absecon, N.J.

**June 26-28, 1961**

American Society of Heating, Refrigerating  
and Air-Conditioning Engineers (Annual Meeting)  
Hilton Hotel  
Denver, Colo.

YOUR WHOLESALER  
CAN SERVE YOU — LET HIM!



Install Insulation with

## TUFF-BOND

Super-Strength Adhesives

### TUFF-BOND #7

... fire-retardant adhesive for  
installing insulation

### TUFF-BOND M-102-H

... duct liner adhesive

### TUFF-BOND 21-C

... clear lap sealer and lap  
adhesive

### TUFF-BOND 21-W

... white lap sealer and lap  
adhesive

### TUFF-BOND #6

... non-flammable fire-retardant  
duct liner adhesive; meets Inter-  
im Federal Standard #00136.

### TUFF-BOND #9

... for bonding rigid and semi-  
rigid plastic foams (polystyrene,  
urethane, isocyanate, etc.) to  
themselves and to other  
materials.

### TUFF-BOND #12

... high pressure duct sealer

### TUFF-BOND QUIK SET

... neoprene-base, fast-setting  
adhesive. Recommended for  
installing metal and nylon  
hangers to smooth surfaces.

### TUFF-BOND GENERAL

### PURPOSE IMPROVED

... all-around adhesive for in-  
stalling insulation, insulation  
hangers, etc.

Ask for literature and prices.

**GOODLOE E. MOORE**  
INCORPORATED  
DANVILLE 27, ILLINOIS

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JANUARY 1961/THE REFRIGERATION & AIR CONDITIONING BUSINESS

# THIS POWERFUL NATIONAL AD WILL HELP YOU SELL MORE FRAM FURNACE FILTERS!

## WARNING!



### YOUR FURNACE FILTER MAY BE DANGEROUSLY DIRTY!

It's Mid-Winter filter change time! Right now your furnace may be delivering only half-hearted heat. After half a winter's service, germ-laden dirt collects in the filter, clogs the flow of heat. You face bigger fuel bills and potential health dangers to your family. Change now to a clean, efficient Fram Furnace Filter... Permachem-treated to kill over 99% of trapped germs. Get whole-hearted heat. Get lasting protection. Ask your service dealer to replace your dirt-clogged filter with a Fram Permachem-treated Air Filter.

CHECK YOUR FILTER WITH THE FRAM EFFICIENCY CHART. Compare the colors with your furnace filter. If your filter is in the Cor D "Danger Zone" it's time to change to a fresh Fram Filter.



## FRAM AIR FILTERS

Products of the Fram Aire Co. • Div. of Fram Corporation • Providence 16, R.I.

we'll say it 20,000,000 times in American Home, Living, House Beautiful, House & Garden and Parents' Magazine!

- **THIS HARD-HITTING CAMPAIGN TELLS YOUR CUSTOMERS: "IT'S MID-WINTER FILTER CHANGE TIME!"** and advises them to see their service dealer, today! Fram is telling your story and makes it easy for you to tie in with the national advertising.
- **FRAM OFFERS YOU A COMPLETE PROMOTIONAL TIE-IN KIT TO HELP YOU BUILD YOUR SALES!** Jumbo mailing cards, newspaper ad mats, stuffers, colorful window streamers, ad reprints, display materials.
- **FRAM'S EXCLUSIVE PERMACHEM-TREATED FILTERS ARE PRICED TO GIVE YOU FULL PROFITS!** Tie in and cash in on the hottest promotion in the industry! Be sure you have a full stock of these quality furnace filters by the nation's leading filter makers.

## FRAM AIR FILTERS

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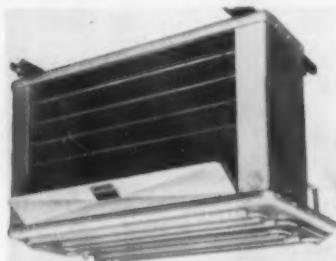
# Product DATA

## Defrost system

**Product:** Heat cycle defrost units with "HCE" inner fin evaporator and "HCX" heat cycle exchanger.

**Manufacturer:** Dunham-Bush, Inc., West Hartford, Conn.

**Features:** Super-heated discharge gas from compressor passes through one side of exchanger, enters inner tube defrost



circuit of evaporator, and defrost coil from inside. Liquid refrigerant from inner tube circuit of evaporator passes through other side of exchanger where it's boiled off before returning to compressor. This insures against liquid returning to the compressor during defrost cycle and eliminates motor overload. Capacities range from 4500 to 72,000 Btuh at 10 t.d.

circle 121 on reader service card

## Baseboard diffusers

**Product:** Model 406 18" baseboard diffuser.

**Manufacturer:** Hart & Cooley Mfg. Co., Holland, Mich.

**Features:** All-steel construction. Additional air handling capacity provided by 38 sq.in. of free area and fact that entire face is on one upwardly slanted plane. Curvilinear fins combined with horizontal fins result in air pattern that blankets window or wall area. Balancing stop permits easy and accurate balancing of system at face of diffuser. Boot opening may be increased from 12 to 14". Face screws are located at top to speed installation.

circle 122 on reader service card

## Slush drink freezer

**Product:** Model J-99 single head slush drink freezer.

**Manufacturer:** Port Morris Machine, Inc., New York, N.Y.

**Features:** Has "Jet Stream" pressure dispensing system which blends flavor into drink as it is being dispensed. Powered by  $\frac{1}{8}$  hp beater motor and 1 hp R-22 condensing unit. Freezer is self-contained. Measures 25 x 24 x 27". Light indicator for mix reservoir indicates when level of

mix is below 1 gal. Produces three different flavored drinks.

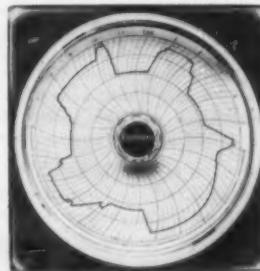
circle 123 on reader service card

## Electrical signal recorder

**Product:** Miniature circular chart recorder for electrical signals.

**Manufacturer:** Instrument Div., Thomas A. Edison Industries, McGraw-Edison Co., West Orange, N.J.

**Features:** Requires no pen, ink, or ribbon. Graph printed by means of stylus on pressure-sensitive paper. Designed to record any variable that can be converted to an electrical signal. Is only  $3\frac{1}{2} \times 3\frac{1}{2} \times 3\frac{1}{2}$ ". Simple gear shift mechanism in form of a built-in, 3-position sliding lever provides 3-speed adjust-



ment of chart rotation. Chart has 3" diameter. Designed for manufacturers of laboratory test equipment and portable apparatus who need compact unit. Electrical signal fed directly into a meter movement without the need for amplification even for signals as low as 10 microamperes. Four types of meter movements available to measure wide range of dc and ac quantities.

circle 124 on reader service card

## Diamond drilling bits

**Product:** "Dymobits" line of diamond hole and core drilling bits.

**Manufacturer:** Milwaukee Electric Tool Corp., Milwaukee, Wis.

**Features:** Available in sizes from 3/16 through 6 $\frac{1}{2}$ " dia., up to 14" on special order. Sleeves are precision furnished



and double plates provide clean hole drilling with minimum wall friction. Diamonds are oriented, positioned, and embedded in tungsten carbide crown in definite pattern.

circle 125 on reader service card

## Air duct calculator

**Product:** Pocket-size air duct calculator with single slide.

**Manufacturer:** Paul S. Morton Engineering Service, Kalamazoo, Mich.

**Features:** Will size ducts by equal friction or velocity reduction methods and estimate metal and insulation requirements. A single setting of slide will give friction per 100 ft. of duct, cfm, velocity-fpm, and round duct diameter and rectangular equivalent in inches. Shows pound weight per linear foot for gages of galvanized and aluminum duct and sq.ft. of surface area per linear foot. Abstracted data tabulated on back of calculator.

circle 126 on reader service card

## Flexible connectors

**Product:** "H.A.P." flexible connectors for pumps and pipelines.

**Manufacturer:** Allied Metal Hose Co., Long Island City, N.Y.

**Features:** Consists of a short section of corrugated flexible metal tubing protected against pressure elongation by



wire braid. Furnished with threaded or flanged end connections. Available from  $\frac{1}{2}$  through 16" in stainless steel,  $\frac{1}{2}$  through 8" in bronze and hot-dip galvanized steel, and  $\frac{1}{2}$  through 4" in monel. Handles pressures to 1500 psig and temperatures to 1200 F, depending on metal.

circle 127 on reader service card

## Recording voltmeter

**Product:** Miniature portable recording voltmeter.

**Manufacturer:** Airserco Mfg. Co., Pittsburgh, Pa.

**Features:** Makes continuous record of actual voltage supplied by 115 or 230 v. ac power source. Records for 31 days with a free-swinging needle that contacts dry-marking paper every two sec-

*Continued on page 67*

## Space Savers



# LARKIN

## HALF-TURRETS

### Ideal for Meat-Cutting Rooms

#### FEATURES THAT SELL

- Original, patented Larkin Cross-Fin Coil with staggered electro-tinned copper tubing and aluminum fins.
- Light-weight, rust-proof aluminum case finished in Larkin blue or gleaming white.
- Built-in heat exchanger.
- Permanently lubricated motors, resilient mounted, with thermal overload protection.
- Hinged drain pan for easy access to coil.
- Airplane-type, vibration-proof fastenings.
- Mounting brackets, slotted for easy installation.
- Fully insulated drain pan.

Modern supermarkets with self-service meat departments require properly refrigerated meat cutting and packaging rooms. Since space is always at a premium, Larkin Half-Turret Humi-Temps win applause for their ability to save space without sacrificing efficiency.

Here again, Larkin has chalked up amazing results in maintaining properly balanced temperature and humidity.

See your wholesaler or write  
for Bulletin 1049B.



**LARKIN COILS** INC.

519 Memorial Drive, S.E. • P. O. Box 1699 • Murray 8-3171  
ATLANTA 1, GEORGIA

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THE REFRIGERATION & AIR CONDITIONING BUSINESS/JANUARY 1961



## INSTEAD, WE GIVE THEM MORE TO SELL, & MORE TO SELL WITH!

We don't preach growth, we practice it. Ask any Typhoon dealer. He'll tell you that he's making more profits today than ever before. Here's why. **28 New Units Added To The 1961 Line.** The greatest product range in Typhoon history...the broadest in the industry...to meet the demand for more specialized equipment. **Product scope.** A superior Typhoon unit for every need—a versatile solution for every problem in installation of air conditioners, furnaces, heat pumps. You sell the broadest line in the industry! **Customized Units.** At little or no extra cost, Typhoon custom-assembles its mass-produced components to your specific requirements. Because you save installation costs, you can sell competitively without sacrificing your profits! **Financing plans.** Less financial strain for you, simpler payment plans for your customers. Helps you stock and sell! **Sales incentives.** Exciting programs that offer bonus benefits for you and your family. **Planned progress.** For 1961, Typhoon dealers are following a complete "Prescription for Progress." National advertising. Local promotions. Specialized programs to make more profit from the Commercial, Industrial and Residential markets. Carefully planned. Skillfully executed...to give every Typhoon dealer the ammunition he needs to make more, more easily! All contained in a new sales kit! Study the facts and you'll agree: Typhoon dealers enjoy a considerable advantage in products, promotions and profits. Wouldn't you like to be one? For more facts and Reference Wall Chart on the complete line, use the collect telegram in this ad. Or call or write us.



Typhoon Air Conditioning Division,  
Hupp Corporation  
505 Carroll Street  
Brooklyn, New York

Rush me full details on a Typhoon  
distributorship.

(your name and address)



Air Cooled Remote Condensing Units 7½, 10 and 15 Tons

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JANUARY 1961/THE REFRIGERATION & AIR CONDITIONING BUSINESS



# It Sure Adds Up...

In Tubing - Nothing Beats COPPER!

In Copper - Nothing Beats READING!

Reading Tube Corporation Specializes in the Making of Copper Tube, Exclusively, Starting in Its Own Refinery and Continuing with Complete Quality Control, thru All the Integrated Processes, to the Packaging of the Finished Product. Complete Stocks at Eleven Strategically Located Distribution Depots Assure Prompt Shipment of Orders.

**Always Specify READING COPPER TUBE!**

## READING TUBE CORPORATION

EMPIRE STATE BUILDING, NEW YORK 1, N. Y. • PLANT: READING, PA.

### Distribution Depots:

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PHILADELPHIA, PA., 921 No. Penn St.

ATLANTA, GA., 690 Murphy Ave. S.W., Unit 5, Bldg. B  
NEW ORLEANS, LA., 1102 St. Thomas St. • CHICAGO, ILL., 305 W. 31st St.  
CLEVELAND, OHIO, 1562 E. 55th St. • DENVER, COLOR., 2635 Walnut St.  
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## Economic Indicators Start This Month for Contractors

TWO SETS OF BUSINESS STATISTICS are being presented here for the first time by THE REFRIGERATION & AIR-CONDITIONING BUSINESS. These figures are designed to guide the refrigeration and airconditioning contractor, giving him a better insight into the economics that affect his business, directly or indirectly.

Statistics are divided into two categories — indicators specifically aimed at our industry, and general economic indicators.

Although data on this page can be found individually in other places, this is the only place where the refrigeration and airconditioning contractor can get it all in one lump. Extraneous data has been eliminated, leaving only that information pertinent to our readers.

Some terms may not be as familiar to you as others.

For an explanation, see the box at the bottom of this page.

**Specialized Indicators**—Airconditioning and commercial refrigeration equipment distributors report a 12% drop in sales for September, as compared to the previous month. But, according to these Dept. of Commerce figures, September's sales were up 15% from the same month a year ago. Distributor inventories for September were down 2% from August, but 15% ahead of last year.

Dun & Bradstreet reports no business failures<sup>1</sup> for airconditioning contractors in October, compared to one in September with current liabilities<sup>2</sup> of \$102,000. In October of 1959, there were two failures with total liabilities of \$53,000.

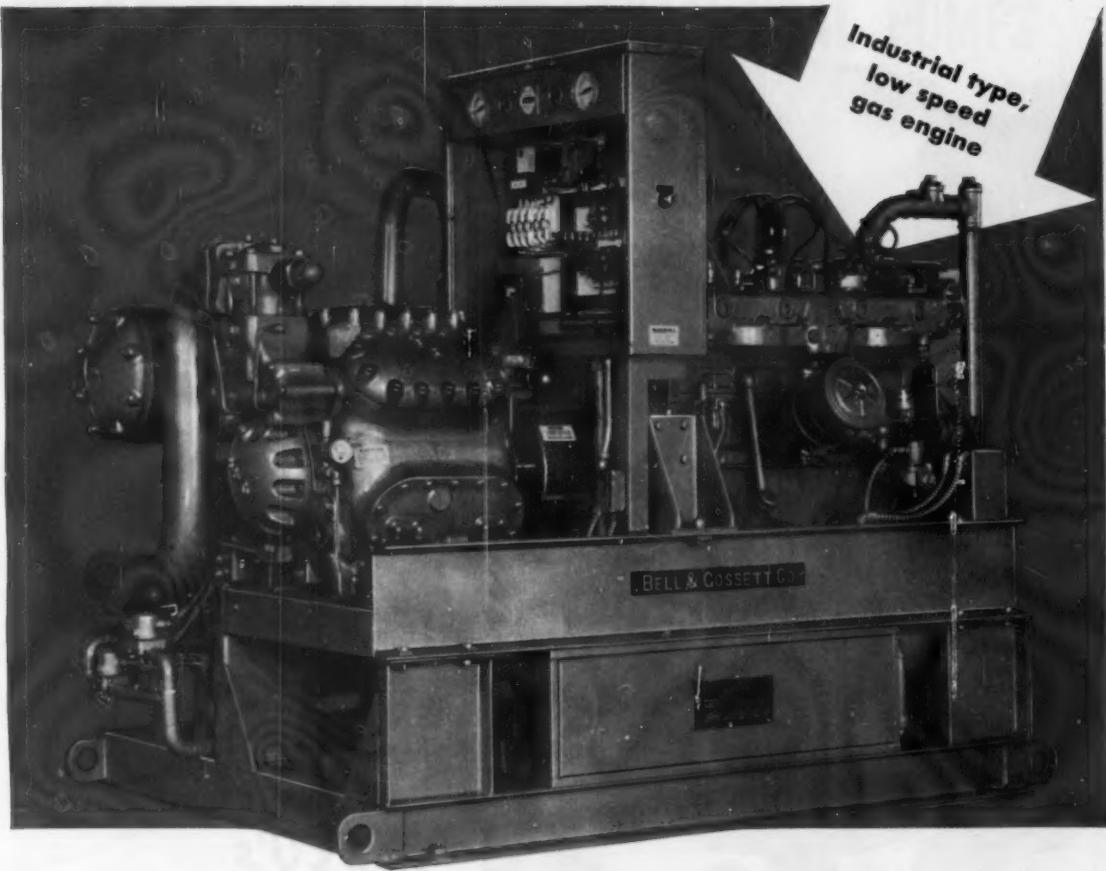
### GENERAL ECONOMIC INDICATORS

Category	Latest Period	Preceding Period	Year Ago	% Change From Last Year
HOUSING STARTS <sup>3</sup> (thousands) Month ending 10/31/60	109.9	102.3	123.3	DOWN 12.5
NEW CONSTRUCTION, Put in Place (\$ billions) Month ending 10/31/60	5.1	5.2	5.1	NO CHANGE
UNEMPLOYMENT (% of labor force) Month ending 9/30/60	5.7	5.9	5.6	UP 1.8
MANUFACTURERS INVENTORIES (\$ billions) Month ending 8/31/60	54.9	54.9	52.2	UP 5.2
MANUFACTURERS UNFILLED ORDERS (\$ billions) Month ending 9/30/60	47.3	47.7	50.6	DOWN 6.5
RETAIL SALES (\$ billions) Month ending 9/30/60	18.0	18.2	17.8	UP 1.1
PERSONAL SAVINGS (\$ billions) Quarter ending 6/30/60	25.2	23.7	24.8	UP 1.6
GROSS NATIONAL PRODUCT <sup>4</sup> (\$ billions) Quarter ending 6/30/60	505.0	501.3	487.9	UP 3.5
INDUSTRIAL PRODUCTION INDEX <sup>5</sup> (1957 = 100) Month ending 8/31/60	109	110	104	UP 4.8

Source: U. S. Dept. of Commerce

<sup>1</sup>Business failures—businesses that ceased operations with loss to creditors following assignment of bankruptcy; <sup>2</sup>Current liabilities—includes all notes and accounts payable and all obligations, whether in secured form or not; <sup>3</sup>Housing starts—number of new housing units, including apartments, on which construction is started each month;

<sup>4</sup>Gross national product—measures output of all goods and services produced by the economy; <sup>5</sup>Industrial production index—measures changes in physical output of manufacturing and mining industries, gas and electric utilities.



## NOW GAS ENGINE POWERED...

B&G Package Liquid Coolers, Condensing Units and Engine Compressors are now available as "package" units powered by integral gas engines. These are the only units with all major components (except the engine) designed, built and guaranteed by one manufacturer.

B&G gas powered units are equipped with an industrial type, low speed gas engine developed for minimum oil and fuel consumption. The engine operates at a maximum of 70% of rated horsepower, for longer life and minimum maintenance.

Additional power plant features include an engine oil auxiliary tank that permits 2000-hour operation without adding oil...automatic and adjustable engine warm-up...100% no-load start at each start-up...automatic choke...capacity control effected by automatically varying engine speed in addi-

tion to varying the B&G compressor unloading.

A particularly outstanding feature of all three units is the compressor, an achievement in advanced design and precision manufacture. All compressors have one bore—a few interchangeable parts service all units.

B&G "package" cooling units incorporate many special features as standard equipment which in competitive units are "extras" or are simply not available. Send for descriptive literature.

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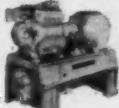
B&G Evaporator



B&G Centrifugal Pump



B&G Condenser



B&G Condensing Unit

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# FOUND YOUR LUCKY BUCK?



## NIBCO's \$20,000 "LUCKY BUCK" ROUND-UP

A great many contractors who buy NIBCO  $\frac{3}{4}$ " wrot copper elbows between January 1 and April 1 of this year are in for a bonus. Random packed in certain boxes of each case will be a silver dollar attached to a claim card. Finders may keep the "buck" or exchange it, with the claim card, at their wholesaler's for a free box of NIBCO  $\frac{3}{4}$ " wrot copper elbows, listing at \$7.30 C. N. P. This promotion, costing more than \$20,000,

is designed to acquaint contractors with the advantages of buying in standard boxed quantities . . . and with the superior features of NIBCO wrot copper fittings. Each NIBCO fitting is guaranteed to conform to A.S.A. standards for size, roundness and quality. You can forget about the time-wasting sloppy fits and the "no goes" when you ask for NIBCO. Expensive call-backs are a thing of the past.

SEE YOUR NIBCO WHOLESALER AND LOOK FOR YOUR "LUCKY BUCK!"

ASK FOR NIBCO

**NIBCO**

FITTINGS FOR  
COPPER PLUMBING

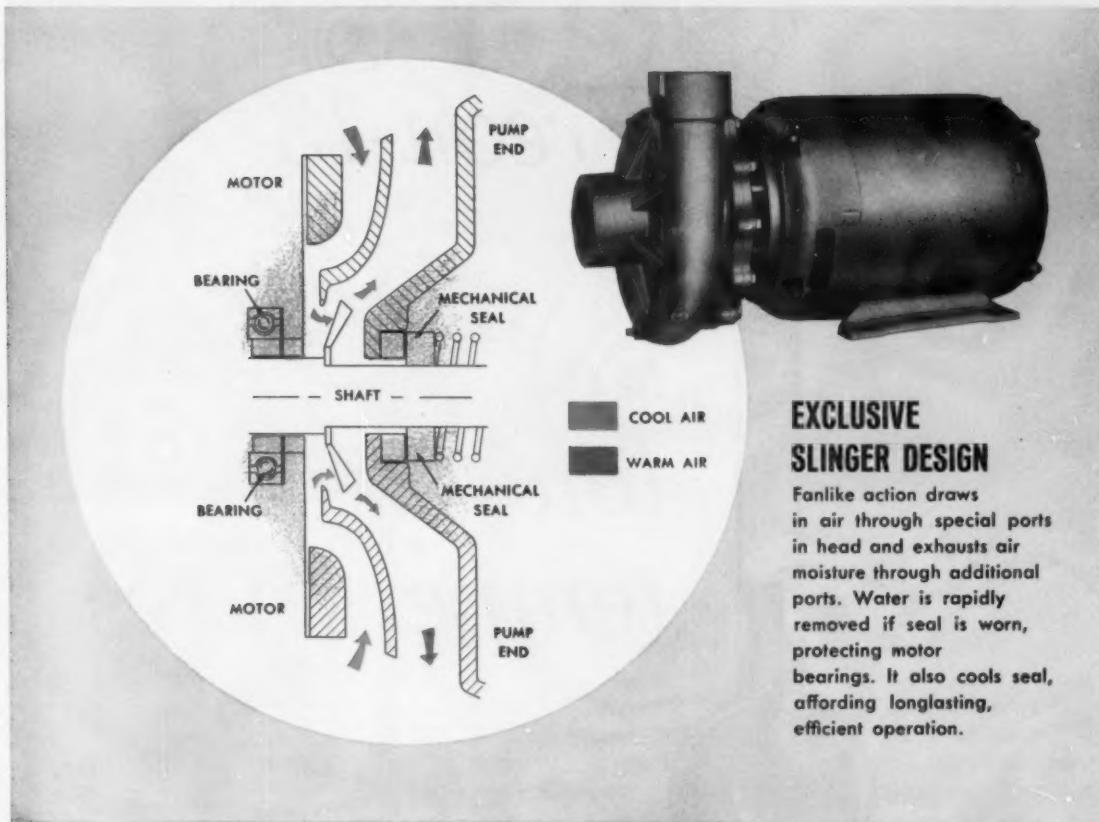
BRONZE VALVES

STEEL WELDING  
FITTINGS

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JANUARY 1961/THE REFRIGERATION & AIRCONDITIONING BUSINESS

# NEW DUNHAM-BUSH A9 CENTRIFUGAL PUMPS PROVIDE 2-WAY PROTECTION AT DANGER ZONE



## EXCLUSIVE SLINGER DESIGN

Fanlike action draws in air through special ports in head and exhausts air moisture through additional ports. Water is rapidly removed if seal is worn, protecting motor bearings. It also cools seal, affording longlasting, efficient operation.

Now Dunham-Bush offers a complete line of close coupled centrifugal A5 and A9 pumps for far reaching applications.

The new heavy duty, quality A9 pump expands the Dunham-Bush centrifugal pump line to 51 size standard models . . . 1750 or 3450 RPM, high capacity and head . . . plus non-standard pumps with special impellers.

Dunham-Bush A9 pumps contain built-in safety factors comparable to that of the pipe and fittings; components designed for heavy duty use; seals for temperatures up to 250°; case held to head with 12 bolts; discharge connection that can be rotated to 12 different positions.

Get full details of the sensational new Dunham-Bush A9 and A5 pumps. Request bulletins 1440A and 1442.

## Dunham-Bush, Inc.

WEST HARTFORD 10 • CONNECTICUT • U. S. A.

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THE REFRIGERATION & AIR CONDITIONING BUSINESS/JANUARY 1961

## DUNHAM-BUSH

AIR CONDITIONING • REFRIGERATION • HEATING • HEAT TRANSFER

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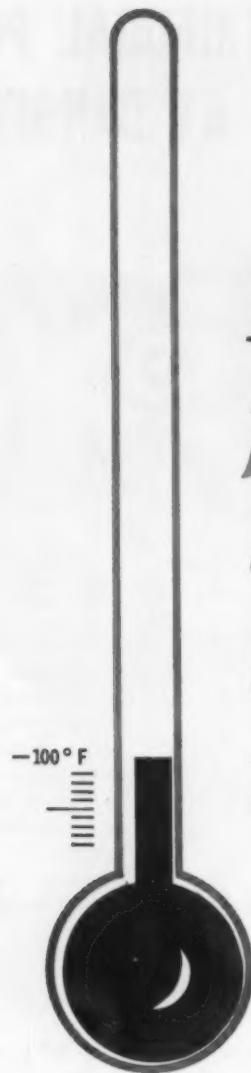
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INDUSTRIES, INC.

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MONSANTO (Canada), LTD.

FOURTH AVENUE, INC.



# Freon-13® for low low temperatures

## Another premium Du Pont refrigerant now available from your refrigeration wholesaler

Ultralow-temperature refrigeration — this is the ever-increasing role being performed by Du Pont Freon-13\*. And now Du Pont has met industry's growing need for this refrigerant by making it commercially available from your refrigeration wholesaler.

Use of "Freon-13" with "Freon-12" or "Freon-22" in two-stage cascade systems has made practical the attainment of ultralow-temperature conditions of -100°F. and lower.

Cascade systems with "Freon-13"

are already operating successfully for such applications as metal treating, shrink-fitting of parts, oxygen manufacturing, environmental testing and low-temperature storage and preservation.

In common with all "Freon" refrigerants, "Freon-13" has excellent thermal and chemical stability—is nonflammable, virtually nontoxic and unsurpassed in purity and dryness. Ask your local, dependable refrigeration wholesaler for it.

For more information write: E. I. du Pont de Nemours & Co. (Inc.), "Freon" Products Division, N2420, Wilmington 98, Delaware.

**FREON®**  
premium quality  
refrigerants

**DU PONT**  
REG. U. S. PAT. OFF.

\*Freon- and F- followed by numerals are Du Pont's registered trademarks for its fluorocarbon refrigerants.

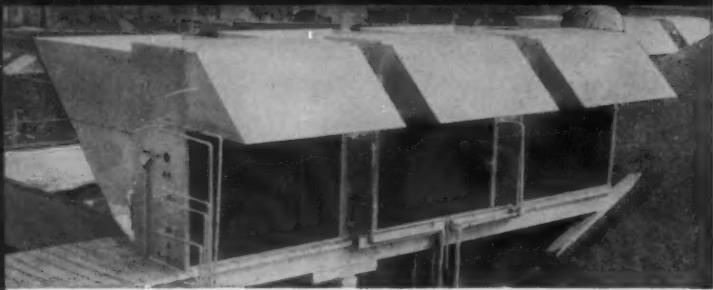
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Better Things for Better Living . . . through Chemistry



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AIR COOLED  
CONDENSERS  
END WATER PROBLEMS!



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Air Flow



Vertical  
Air Flow

SEE  
OUR  
EXHIBIT  
Booth #606



## Sacramento Supermarket Saves \$200 a Month in Water and Sewerage Bills Alone!

Water in Sacramento, California is hard and it's costly! Arata Brothers Supermarket solved this problem by changing from water cooled condensers to 7 Bohn Air Cooled Condensers. The result was lower maintenance and lower operating costs...with savings of \$200 monthly on sewerage and water bills alone. More importantly, the Bohn Air Cooled Condensers maintain even temperatures in the store's refrigerated equipment *at all times of the year!* Even a high temperature of 114° recorded in 1959 was easily handled by the Bohn Air Cooled Condensers! Whether it's hot or cold, Bohn controls adjust automatically to seasonal weather changes and maintain proper head pressure at all times.

For low first cost...low operating and maintenance costs, the answer is Bohn Air Cooled Condensers...available in horizontal models (deflectors optional) and in low-silhouette vertical models.

2 through 60-ton sizes.

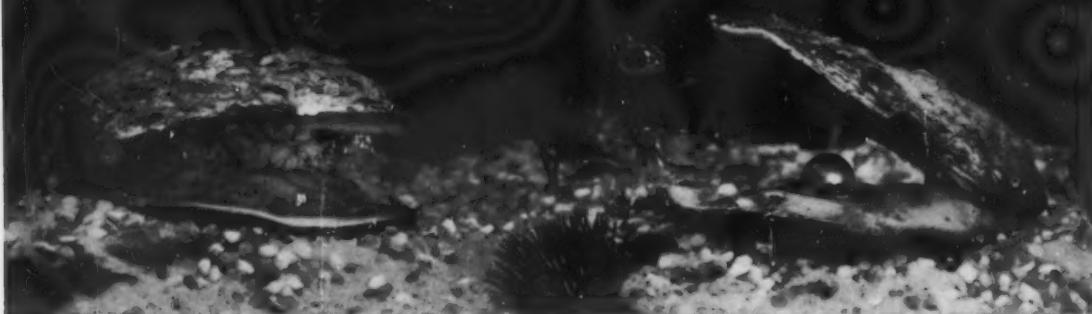
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ALUMINUM & BRASS CORPORATION  
Danville Division • Danville, Illinois

Buy the known line...the Bohn line

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# We don't know what noise annoys an oyster...



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AIRCOUSTAT® is the quality standard in its field. Its pioneer engineering is matched by premium construction that features heavier gauge metal than competitive units. It is assembled with care to give the quality performance promised by its original design. And AIRCOUSTAT provides *guaranteed* attenuation certified in the laboratories of independent research organizations.

*Write today* for your copy of the Aircoustat Selection Manual, a quick guide to eliminating noise in all air-handling systems, to: **KOPPERS COMPANY, INC.**, Sound Control Dept., 3101 Scott St., Baltimore 3, Md.



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*Engineered Products Sold with Service*

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Audiometric Rooms

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the quality tells . . . the quality sells

new **JANITROL**

WIN-SUM-MATIC

**year 'round  
air conditioner**



**COMPACT . . .**

Fits in as little as 3 $\frac{1}{2}$  square feet!  
Features Dura-Tube Gas Heating Heart  
and powerful air-cooled cooling.

# WIRE US COLLECT FOR PROOF

WESTERN UNION

HARRY C. GURNEY, General Sales Manager,  
Janitrol Heating and Air Conditioning,  
A Division of Midland-Ross Corporation,  
Columbus 16, Ohio

RUSH ME FACTS ON JANITROL'S  
SELECT DEALER PROGRAM.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
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## THE PROFIT PARADE IN THE 60'S WILL BE LED BY JANITROL SELECT DEALERS!

Paced by the exclusive Janitrol Select Dealer Plan that gives you action in place of promises... adds vital new depth and dimension to your Growth and Profit Future!

check-out the highlights!

- 1 **The Finest Factory Technical Training Program** in the industry... tuition-free for Select Dealers!
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- 3 **Dealer Information Service**... authoritative newsletters, bulletins and periodicals keep Select Dealers up to date on latest developments in equipment, applications, service and merchandising slants!
- 4 **Regular Regional Meetings**... bring Select Dealers and Janitrol personnel together for stimulating discussions of merchandising, management, engineering and other subjects pertinent to dealer growth and profit!
- 5 **Liberal Dealer Stocking Plans**... assure the equipment required by Select Dealers will be on hand when needed.
- 6 **Free Retail Salesman Training and Aids**... Janitrol helps recruit and train salesmen for Select Dealers. Provides proven, sales-clinching presentation manuals for cooling, heating and new home builder selling!
- 7 **Protected Territories**... Select Dealer Franchises in any market area are limited. No "free-wheeling" franchising to choke off profits!
- 8 **Powerful Planned Co-op Advertising**... a year-round program of hard-hitting local level advertising and promotion prepared for you by experts!
- 9 **Powerful National Advertising**... to create demand in your own local market for Janitrol products—back up your sales and promotion activities!
- 10 **Promotion Package Worth \$300.00**... for newly franchised Select Dealers. Includes illuminated signs, floor and window displays, colorful literature, demonstration kits, etc.
- 11 **Yellow Page Telephone Listings**... reserved for you, as a Select Dealer, in your own local phone book under the JANITROL headings.

12 **Competitive Pricing**... made possible by famous Janitrol advanced engineering and new automated production lines. Puts Select Dealers in the driver's seat with quality at low cost!

13 **The Top Brand Name**... Janitrol leadership in design and quality is nationally recognized and acclaimed. Over two million Janitrol units have been sold!

14 **A Great Line... A Complete Line** featuring the Win-Sum-Matic, finest of a fine line!



The Janitrol Win-Sum-Matic Year 'Round conditioner brings you years-ahead features and performance... plus the industry's greatest selection of quality accessories for custom-designed comfort systems to boost your profits! Built for time-saving installation and backed by a 20-year warranty on the heat exchanger. Operates year 'round with the quiet thriftiness of clean gas heat and powerful air cooling. New slim-trim styling; warm two-tone colors; and exclusive design features packed with sales appeal!

The all-new Series 52 condensing unit is featured as the cooling system for the Win-Sum-Matic. Attractively styled, weatherproof and safe. Top-mounted, upflow fan boosts performance... operates with outside temperature to 125°F.

Other quality products in Janitrol's full line include Oil and Gas-Fired furnaces in horizontal, vertical and counter-flow models... plus a special line of competitive equipment built for the high volume, new home market! In cooling, Janitrol covers the residential and commercial markets with economical, self-contained units; add-on, modernization units and a completely new series of air-cooled condensing units. Janitrol Unit heaters, duct furnaces and schoolroom conditioners blanket the industrial heating market with a wide selection of models from 30,000 up to 1,750,000 Btu inputs.

You owe it to yourself to get the full story on Janitrol's full line... plus the fabulous Janitrol SELECT DEALER PLAN! WIRE COLLECT RIGHT AWAY!

FOR SOARING PROFITS IN THE SIXTIES, JOIN  
THE JANITROL SELECT DEALER GROUP! WIRE  
COLLECT FOR COMPLETE INFORMATION,  
ABSOLUTELY WITHOUT OBLIGATION...

**JANITROL**

HEATING AND AIR CONDITIONING

A Division of Midland-Ross Corporation  
Columbus 16, Ohio • In Canada: Moffats Ltd., Toronto 15

# LET'S TALK *Business*

## Cooperation . . . a sign of industry maturity

WE sat in on all of the national conventions of refrigeration and airconditioning associations at the close of the year, and what we saw and heard indicated strongly that our industry has grown up.

At their annual meetings, contractor-dealers, wholesalers, and manufacturers alike expressed a knowledge of the problems that face the industry as a whole. And each has programmed its association to work with other interested groups in an attempt to solve these common problems. Inter-association committees are making progress because there is a sincere desire on both sides to resolve problems affecting all.

It has not always been thus.

The one group that is most important to the continued growth and prosperity of the industry is you—the contractor-dealer. It is through you that the activities of other industry groups are funneled to put the industry's products in the hands of the user. The common denominator linking your efforts and ambitions with those of the wholesaler and manufacturer is the refrigeration cycle.

It makes no difference whether you are doing airconditioning for human comfort or industrial purposes, installing commercial or industrial refrigeration, or working with space-age cryogenics, somewhere along the line you become involved with one or more of this broad range of industry products—air handling equipment, air purification equipment, ice makers, industrial and piping insulation, sheet metal and ductwork, controls of all types, and the equipment and materials needed for maintenance and repair.

Contractors, through their organization, are sponsoring an apprentice training program that is really beginning to show results in the form of trained manpower that will help assure the industry of good installations and proper service.

The manufacturers' association has a committee working diligently to establish refrigeration and airconditioning training courses in the public secondary school system, including evening courses for adults.

Wholesalers are continuing to sponsor service and installation training courses for their customers, providing top talent to do the instructing.

The net result of these educational efforts will be more satisfied users. **More users mean more business.** More business lays the groundwork for improved profits.

We are not suggesting that all problems—such as direct selling, for example—have been or will be easily solved. But we heartily applaud the industry efforts to negotiate a solution to these problems.

All of these actions in this broad field tied together by the refrigeration cycle indicate that our industry has come of age. This maturity is our best possible assurance that the next decade will see the greatest and fastest growth we have ever experienced.

One answer lies in the cooperative actions of the various industry associations. So if you are not active in the local or national group or groups covering your sphere of interest you are missing a splendid opportunity to further your own best interests.

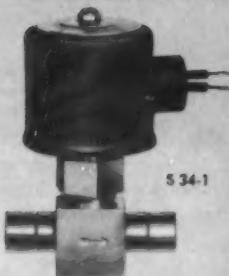
*Jack Robinson*

# ALCO

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**300 LBS. M.O.P.D.**

common refrigerants  
except ammonia



LINE CONNECTION SIZES  
1/8 O.D.F. 1/8 O.D.F.  
1/2 O.D.F. 1/2 S.A.E.  
PORT DIAMETER: 1/4



LINE CONNECTION SIZES  
1/8 O.D.M. 1/8 S.A.E.  
1/2 O.D.F. 1/2 F.P.T.  
1/2 S.A.E.\*

WITH OR WITHOUT MANUAL  
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\*Strainer Assembly Included



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OF S 36-1

LINE CONNECTION SIZES  
1/8 O.D.M. 1/8 O.D.F.  
1/2 O.D.F. 1/2 S.A.E.  
1/2 S.A.E.  
PORT DIAMETER: 1/2

LINE CONNECTION SIZES  
1/8 O.D.M. 1/8 O.D.F.  
1/2 O.D.F. 1/2 F.P.T.  
3/8 F.P.T.  
PORT DIAMETER: 3/8

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**BUY SECURITY • BUY QUALITY • BUY ALCO**

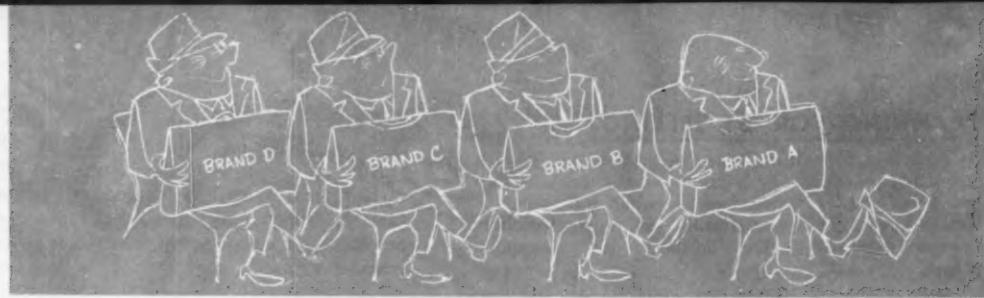
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JANUARY 1961/THE REFRIGERATION & AIRCONDITIONING BUSINESS



*A special report by the editors of THE REFRIGERATION & AIRCONDITIONING BUSINESS*

# Planning for '61 Selling?

**Check your  
product lines —  
they can make or  
break you!**



ARE YOU GUILTY of not keeping track of your business? If you're not, consider yourself lucky—you probably have a thriving business. But if you are guilty, you've got a lot of company.

That's what we found out in talking to more than 50 contractor-dealers in six major cities. Now, at the start of a new year, is the best possible time to stand back and take a good, hard look at your business. Start first with your product lines.

- Do you make a reasonable profit on each line you handle?
- Do you get delivery when promised?
- Do you get ample sales, engineering, and service help?
- Do these products cause you a minimum of costly call-backs?

If you can't answer yes to these questions, perhaps you'd be better off dropping one or more of these lines for others. Or maybe you should add a line to what you already carry.

If you're like most of the people we've talked to, you can judge yourself GUILTY on one or both of the following charges:

**CHARGE No. 1:** You let your product lines lose you money and customers, and cause you no end of worry, before making a change. **SENTENCE:** Make periodic checks on what your lines are doing for you. See in what direction your business is heading. And, if you don't like it, do something before you really get burned.

**CHARGE No. 2:** You sit back and wait for manufacturers to contact you. **SENTENCE:** Aggressively seek out those manufacturers you think can change the direction of your business. Don't wait until it's too late—the right one might not come along just when you want him.

These sentences are not harsh, they're just common sense. The verdict is in. The evidence consists of the 10 case studies contained in this article.

Looking over these case studies, and all the others we collected but didn't have space to present here, we came up with a significant answer to another mighty important question: Why do contractor-dealers change lines?

Most cynics in this business would say, "They change lines whenever somebody offers them a better price." But our personal interviews with these contractors

*Continued on page 42*

## PLANNING FOR '61 SELLING?

*Continued from preceding page*

tor-dealers made it clear that the real reason for changing goes far beyond this.

Sure, all contractor-dealers want a quality line at a competitive price. But price alone is not the only consideration, or even the most important one, in making a change. It's really the product—and the service behind the product—that counts most with the men we talked to. And by service they mean engineering help, deliveries when promised, and ready availability of parts and components, as well as a trouble-free product that doesn't require a lot of callbacks.

Financing plans are important only to those contractor-dealers who really need them. Advertising and promotional aids are always welcome. Sales and service training programs can be a big help. But most contractor-dealers, we found, will trade incentive programs and bonus plans anytime for a competitively priced product that doesn't need much service and will keep their customers happy.

Of course, in order to select such products intelligently you must constantly keep abreast of what is being offered by manufacturers. There are many ways you can do this, but here are some of the more important ones:

**Attend industry shows**, national, regional, or local. The next national show is next month—the 15th International Heating & Air-Conditioning Exposition, Feb. 13-16, at the International Amphitheatre, Chicago, Ill. You'll find full details on this show in our February issue. At these shows you have a chance to see the products and talk to the top sales and engineering people from the companies that manufacture them.

**Read industry publications**, the advertisements as well as the editorial material. All worthwhile refrigeration and airconditioning publications consider it one of their prime responsibilities to keep you informed of new products introduced to the trade, and of useful literature on these products or their application that the manufacturers may make available. And the advertisements in these publications offer the manufacturers a direct means of getting their product stories and sales programs across to you.

**Be active in industry associations.** You will find news of all the major industry associations in each month's issue of **THE REFRIGERATION & AIRCONDITIONING BUSINESS**. Join the one that best fits your needs and participate fully in its programs. You'll find this gives you a closer liaison not only with the manufacturers but also with your competitors, and that the resulting interchange of product information can be most helpful.

**Listen to the manufacturers' salesmen** who call on you. Be willing to give them a reasonable amount of your time. Be prepared to ask them for the particular information in which you are interested. Pick their brains as best you can. This may come as a surprise to you, but on the average it costs the manufacturer

\$42 every time one of his salesmen calls on you. So be sure you get full value out of each call.

Now let's look at the evidence—the actual reports of 10 typical interviews between our editors and more than 50 contractor-dealers they talked to in documenting this case against you. Here's how the testimony went:

### CONTRACTOR-DEALER A

"We handled a complete line of airconditioning equipment from one manufacturer for about 10 years. When the manufacturer set up distribution through wholesalers instead of contractors, I had no one to help me with my problems. I didn't like having to go to the factory every time I needed some aid. We selected our new line of equipment when the manufacturer who solicited our business convinced me we could sell on the brand name of the product as well as our own company's reputation for workmanship. We still have some problems with service, but this is overcome by the manufacturer's quality line and his ability to provide us with many side benefits, such as distribution and competitive price. I object to sales incentive programs—I'd rather have the manufacturer pass the price of these trips along to me in the form of increased profit than have it added to the price of the product."

**VERDICT:** Hurt by change in manufacturer's policy, but didn't make change until contacted by another manufacturer.

### CONTRACTOR-DEALER B

"We based our selection of a new line of airconditioning equipment on a test we ran in a 100-home development. We installed four different manufacturers' equipment and waited for service calls. We chose the company whose product had the least number of complaints. Our old line became a big service problem when it changed its controls. Now we've got a product that we can install in one call, check it out, and forget it. Our new line offers us excellent engineering aid. A sales engineer stops in once a week and, if I'm not around, he will help my men with any problems they have. If I don't have time to do my own engineering, this sales engineer will do it for me. He'll also help my men get parts and help them on service calls. Our big problem in the past was phone calls late at night from customers on call-backs. With this headache eliminated, our business goes a lot smoother."

**VERDICT:** Changed lines only after being hurt by product failure. Made selection of new line on basis of field test.

### CONTRACTOR-DEALER C

"We added a new line of packaged equipment last spring. Our old line of equipment was serving us well and we were satisfied with it. However, everyone else can buy their equipment for the same price we can. A man who buys only one or two units pays the same as we do for 80 or 90 units. Our advertising program with this manufacturer was only doing a good job for our competitors. Be-

sides, we felt we were losing the replacement business. Before selecting our new line, we shopped around for two years. Eight to ten companies approached us, but only five happened on the scene at the time we decided to make the change. We made our choice on the basis of the controls, the price, and the name brand. We still handle our old line for heating and cooling, but have picked up the replacement business with our new line. Results have been good, since there are a limited number of dealers with the same line in our area. In adding a new line, we looked for a brand name unit that our customers would accept. We weren't interested in financing plans because we always pay our bills on the 10th."

**VERDICT:** Hurt by manufacturer's pricing policies and lack of territorial protection. Made selection of new line from among salesmen who "...happened on the scene" at the right time.

#### CONTRACTOR-DEALER D

"We dropped one line because we didn't get good service from the factory and because they couldn't, or wouldn't, give me a good reason for such poor service. We also dropped it because they wouldn't pay \$500 on a co-operative advertising program that would have reached 35,000 prospects. The manufacturer we substituted came to us offering a good price line, good delivery service, and factory service on the airconditioning units. They are going along with us on a promotion program, and have agreed to pay half of the cost. Price is not the most important thing with us, however, because we consider the manufacturer's reliability as the prime factor."

**VERDICT:** Hurt by lack of sales promotion aid and service from factory. Dropped line but replaced it only when approached by another manufacturer.

#### CONTRACTOR-DEALER E

"We switched lines of refrigerated food cases because of a lack of service and failure to keep promised delivery dates. The line we added, better known nationally, assured us these problems would be solved. We were approached by at least 12 representatives throughout the year trying to get us to either switch lines or add new ones. We were on the lookout for a competitive price, increased customers, and aid from the manufacturer at various levels. Some salesmen, however, gave very poor presentations, were not very aggressive, and we rarely ever heard from any of them again. I'd change again if our new manufacturer fell down on service and delivery dates."

**VERDICT:** Hurt by failure of factory on deliveries and service. Talked to a lot of manufacturer salesmen, but only when they came to him.

#### CONTRACTOR-DEALER F

"We were forced into the contractor business when our manufacturer told us that supply would be handled only through wholesalers. Up to then, we were a distributor for this manufacturer. This made us look for a line that

we could get at the lowest acceptable price. We chose our newest line because it was the least expensive without involving stocking. We still use the old manufacturer on limited numbers of packaged and applied installations. Our newest line fills in on packaged jobs and another line fills in on applied jobs. When we were hunting for a new manufacturer, we called in five or six representatives. Salesmen did a good job of presenting their cases, but it was just a matter of dollars-and-cents. We needed a price line to fill in the gaps. The line of packaged equipment has a few troubles, but the manufacturer has a good attitude. Manufacturers only look for heavy volume in a dealer, nothing else. Manufacturers do not pay enough attention to field problems. It's important for the contractor to know how each piece of equipment is engineered."

**VERDICT:** Hurt by change in manufacturer's policy, but called in salesmen for new lines in which he was interested.

#### CONTRACTOR-DEALER G

"We added a new line of packaged airconditioning because of the company's good name and the quality of the product. It also seemed that our customers had specified it over the brand we had been carrying. It's too early to say if we accomplished our objective of increased sales and filling in the gaps from our previous line. I'd consider changing again if a better-known manufacturer approached me with a complete line. However, I would wait for the manufacturer to call on me. In the past, I've been called on by representatives from at least four manufacturers every year to persuade me to add their line. Their salesmen, however, seem to lack knowledge of our customer's problems, so they present poor sales talks. In looking for a new line, I'd consider brand name, completeness of line, price, and sales and service training programs as being most important."

**VERDICT:** Made the move to a new line before he was really hurt, but just sat and waited until right line came along.

#### CONTRACTOR-DEALER H

"Our former manufacturer was pressuring us to produce factory billings, so we changed our business from being a dealer to a contractor. We also wanted to get out of the dealer business. To do this, we switched complete lines of packaged airconditioning equipment and ice machines and dropped a line of store fixtures. We made this last move because we wanted to sell store fixtures from a catalog. Instead of having different manufacturers for packaged airconditioning and ice machines, we now order both from one source. We might have considered another line, but only three salesmen other than the manufacturer we chose called on us all year."

**VERDICT:** Waited until hurt by factory pressure before changing lines, then complains he didn't have much choice because only four factory salesmen called on him.

*What do manufacturers look for?  
See the next page for the answer.*

## What your supplier looks for in you

SO YOU'RE LOOKING for another line? Then just remember that this relationship between manufacturer and contractor-dealer is a two-way street. If you want to handle a particular product line you must be able to offer what that manufacturer is looking for in the way of an outlet for his products. And most of them agree pretty well on what the requirements for a good contractor-dealer are.

We talked to a number of manufacturers when we were preparing this article, because we wanted to get their side of the story, too. And we learned one surprising fact: what the manufacturer is really looking for isn't at all what the contractor-dealer thinks he's looking for!

Here's the full story.

BUSINESS KNOW-HOW and business integrity—these are the two factors that manufacturers look for first in evaluating any contractor-dealer as a possible outlet for their products.

Sure they're interested in volume. But volume is only the tail, not the dog. Manufacturers know that if a contractor-dealer runs his business soundly and responsibly, chances are the volume will take care of itself.

The responsible manufacturers are looking for the long haul, not the quick buck. They would rather build their distributing organizations with solid, substantial, well-run contractor-dealer firms with a demonstrated capability for selling a product and keeping it sold, than with high pressure, hit-and-run companies interested only in high sales volume without regard for customer satisfaction.

They recognize that the contractor-dealer who doesn't manage his business properly isn't going to make a proper profit. And they know that without a proper profit no contractor-dealer can stay in business indefinitely. The contractor-dealer who's heading for ultimate bankruptcy isn't going to do any manufacturer any good in the long run, no matter how many units he sells in the process of going under.

As one manufacturer put it, "the inability to man-

age the company's internal operations breaks more contractor-dealers than does lack of sales ability, so this is the No. 1 problem."

Business integrity—the standing of a contractor-dealer in his community—is looked upon by manufacturers as another measure of a firm's soundness and its ability to deliver repeat business over a long period of time.

One manufacturer told us that the first thing they take into consideration in franchising new contractor-dealers is the firm's credit rating (certainly an important element of the entire business management picture). They automatically exclude from consideration any companies with bad credit.

Then they look to see if the company is built around one or more individuals with enough sales ability to get a good price for the product (here the importance of the profit angle is again emphasized). A good price does not necessarily mean the top price, for an adequate knowledge of product and application may make it possible for a contractor-dealer to sell for a lower price than his competitors and yet make a reasonable margin of profit.

Adequate service knowledge and technique is the third point of consideration, because the manufacturer realizes this is necessary to keep the product sold and keep the customer happy.

An organization that combines this sales and service capability, and has backed it up with intelligent business management and demonstrated business integrity is the kind of contractor-dealer this manufacturer is looking for.

Below is a list of questions that any top-grade manufacturer might ask you before giving you a franchise to handle its products. The manufacturers we talked to agreed that most of these points would be covered in any franchise discussions with contractor-dealers. Obviously, the more of these questions you can answer with a yes, the better your chances are of nailing down representation for top product lines. ♦

### Ask yourself these questions . . . your supplier probably will

1. Have you consistently demonstrated the ability to operate your business at a profit?
2. Do the top men in your organization have the respect and confidence of the community?
3. Are you adequately financed?
4. Do you have a well trained, smooth running organization with the personnel and facilities to handle our line?
5. Is your organization marketing minded? Is it staffed with people who recognize that even the largest and most complex engineered system has to be sold before it can be installed?
6. Do you cover your market area thoroughly, getting to all the people responsible for buying?
7. Do you have a sound sales program, and an effective sales force with the interest and ability to really promote our product?
8. Will you accept a quota and make a reasonable effort to meet it?
9. Will you accept and use our promotional material in accordance with our marketing program?
10. Are you willing to feature our line and push it?
11. Do you have the courage to maintain reasonable margins when times are tough?
12. Are you set up to give continuing service to customers so as to maintain goodwill for our product?
13. Do you handle any conflicting lines of products?
14. Do you handle other products that fit in with our line?



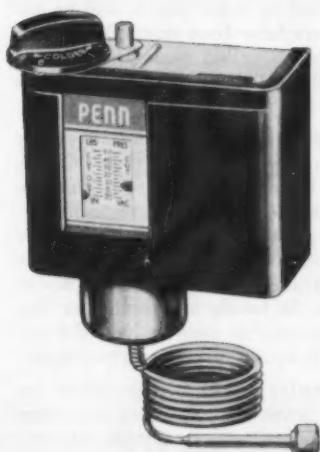
Series 271 single pole and Series 1273 two pole dual function. Temperature models available.

Below ... Series 270 single pole and Series 1272 two pole single function for either low or high pressure. Also temperature models.

## YOU CAN DO MORE JOBS WITH LESS CONTROL INVENTORY!

Penn's line of refrigeration controls has the capacity and versatility to satisfy all cooling requirements! Single or double pole models are available for all types of applications and are rated to handle single or polyphase motors from 1 through 5 H.P. capacity!

And, you get real economy, too. The two pole heavy duty models eliminate the need for motor starters when used on polyphase motors with built-in overload protectors. With their two separate circuits, these models are really 2 switches in 1. Don't settle for less . . . ask your wholesaler for Penn Controls!



**PENN CONTROLS, INC.** Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES  
circle 40 on reader service card

# You can do your own MARKET RESEARCH

GEORGE C. WEBSTER, *consulting editor, business management*

THERE'S AN IMPORTANT PLACE for market research in *your* business. Don't be deluded into thinking it is a tool for big business only. Properly applied, market research can help improve your operations no matter how large or small your business is.

Maybe your supplier can help you with your market research. Sometimes manufacturers have facilities and services that would be unavailable to you. But if you can't get any assistance from this source, don't be afraid to tackle it on your own.

A good place to start in any market research program is to find out what your corporate image is. Your image is merely what people think of your company . . . what kind of reputation your company has . . . what it is noted for. This image can be good or bad. Either way, it has a great deal of influence on your future operations.

Some companies may operate profitably for a time, but build a poor image in the process. Because of this, they may wake up suddenly to find themselves out of business.

How do you go about determining your company's image? Simple. Make a survey. You can also use the survey technique to determine the demand for a product or service. It may be especially helpful when selecting a new product line, to find out how acceptable the line is to your potential customers. (See page 41 for more information on this.)

Here's how to go about making a survey:

**Select Your Sample**—Take a representative number of your present customers, picked at random. Then select an equal number of the same type of prospects at random from the telephone directory. "At random" actually means using a set plan of selection, such as taking every tenth name from the top of the first column on each page. This eliminates grouping cus-

tomers of one type, one area, or one income group. These names make up your sample.

**Set Up a Method for Interviewing**—The person assigned to do the actual interviewing must be accurate and specific, both in obtaining information and recording it. Here's a warning: all people you interview do not think the same way, nor do they understand questions in the same way. The interviewer should be at liberty to rephrase questions to suit the person being interviewed to make sure that person understands the meaning of the question. Interviewers must be intelligent and persistent, yet be polite.

**Fill in the Questionnaires**—The interviewer must be able to write rapidly and accurately record what he has heard. If he uses abbreviations in taking down material, these should be written out immediately at the close of the interview to make sure it will be understood. If any answers have been omitted, the person interviewed should be called back immediately. Interviewers should eliminate slipshod data from the survey.

**Tabulate Your Information**—Make sure all survey forms have been accurately completed, then tabulate the information on a large work sheet. All columns on this sheet must be totaled to make sure no mathematical errors have crept into the work. You may vary the suggested tabulation sheet, depending on how your survey comes out and how the information can be most helpful to you. In tabulating, remember that any spontaneous comments, or answers you did not expect, will be helpful in future surveys you may make.

**Analyze Your Results**—After you complete the tabulation, you'll have some idea of where you stand with your customers and with those people who are

*Continued on page 48*

Interviewer \_\_\_\_\_

Date of Interview \_\_\_\_\_

TELEPHONE SURVEY FOR ABC AIR CONDITIONING

Name \_\_\_\_\_ From Present Customer List \_\_\_\_\_  
From Telephone Directory \_\_\_\_\_

Address \_\_\_\_\_

Phone No. \_\_\_\_\_

Introduction: Good morning, Mrs. \_\_\_\_\_. This is \_\_\_\_\_ of  
\_\_\_\_\_. We're making a survey of the heating and air  
conditioning buying habits of people who live in this area, etc.

1. a. If you were asked to recommend a heating and air conditioning contractor in this area, which one would you recommend? (name and address) \_\_\_\_\_
  
1. b. Why would you recommend this dealer? \_\_\_\_\_
  
2. From which contractor did you make your last purchase of heating or air conditioning? (name and address) \_\_\_\_\_
  
- \*\*\* If interviewee indicates he has never purchased, say "thank you" and end interview. If purchase has been made, continue.
3. How long ago was this purchase made: Within last year \_\_\_\_; 2 years ago \_\_\_\_;  
3 years ago \_\_\_\_; 4 years ago \_\_\_\_; more than 4 years ago \_\_\_\_.
4. What brand was purchased? \_\_\_\_\_
5. Why did you choose to buy at this particular contractor? \_\_\_\_\_
6. What in particular did you like about this contractor's service? \_\_\_\_\_
7. Was there anything you did not like about the service offered? \_\_\_\_\_
8. Which heating and air conditioning contractor's advertising do you think is best? \_\_\_\_\_
  
9. Where have you noticed this advertising? Television \_\_\_\_; newspaper \_\_\_\_;  
radio \_\_\_\_; direct mail \_\_\_\_; other (state where) \_\_\_\_\_.

INTERVIEWER: USE BACK OF SHEET FOR OTHER COMMENTS.

HERE'S A SAMPLE telephone questionnaire for use in  
researching the residential airconditioning market. It may

easily be adapted to fit any market that you wish to  
survey, refrigeration as well as airconditioning.

## DO YOUR OWN MARKET RESEARCH

not your customers, and some reasons for it. You may even find it necessary to prepare a series of supplementary questions to clarify some things presented in your tabulation.

Perhaps you won't be able to completely understand the results on the first reading, so it is advisable to put your tabulations away for a few days. When you review them, ask yourself what the information means. Why does your competitor have a higher acceptance than you do? What is the reason for the low acceptance of a competitor that you thought was very strong? How much higher should your acceptance be among your own customers and those who are not your customers?

The analysis of your tabulation will give you better insight for planning your business strategy. You'll also be able to see if the image you've been trying to build

is actually what you have been building.

In order to get the complete picture, it will be necessary to repeat this study every year, preferably at the same time, varying it slightly but making sure it is similar enough to previous surveys to make a comparison.

You'll get a lot of interesting information from these continuing studies. You'll see whether or not a competitor's advertising program actually paid off in terms of increased consumer acceptance. You'll see how these advertising programs affected your sales. You'll be able to watch your acceptance among your own customers and those who are not your customers to see that the trend of acceptance is in the right direction. You'll spot any deficiencies in your own organization and make corrections before too much harm is done.

By using this technique of market research, you'll be supplying a valuable aid in planning your business, because you'll know where you stand. ♦

## HERE'S HOW TO TABULATE YOUR RESPONSES

### TABULATION SHEETS

First big sheet . . . allow enough room to fill in answers in the columns

QUESTION	1(a)	1(b)	2	3	4	5	6	7	8	9

and so on for all of your responses

From this original work sheet, you can condense tabulations as follows:

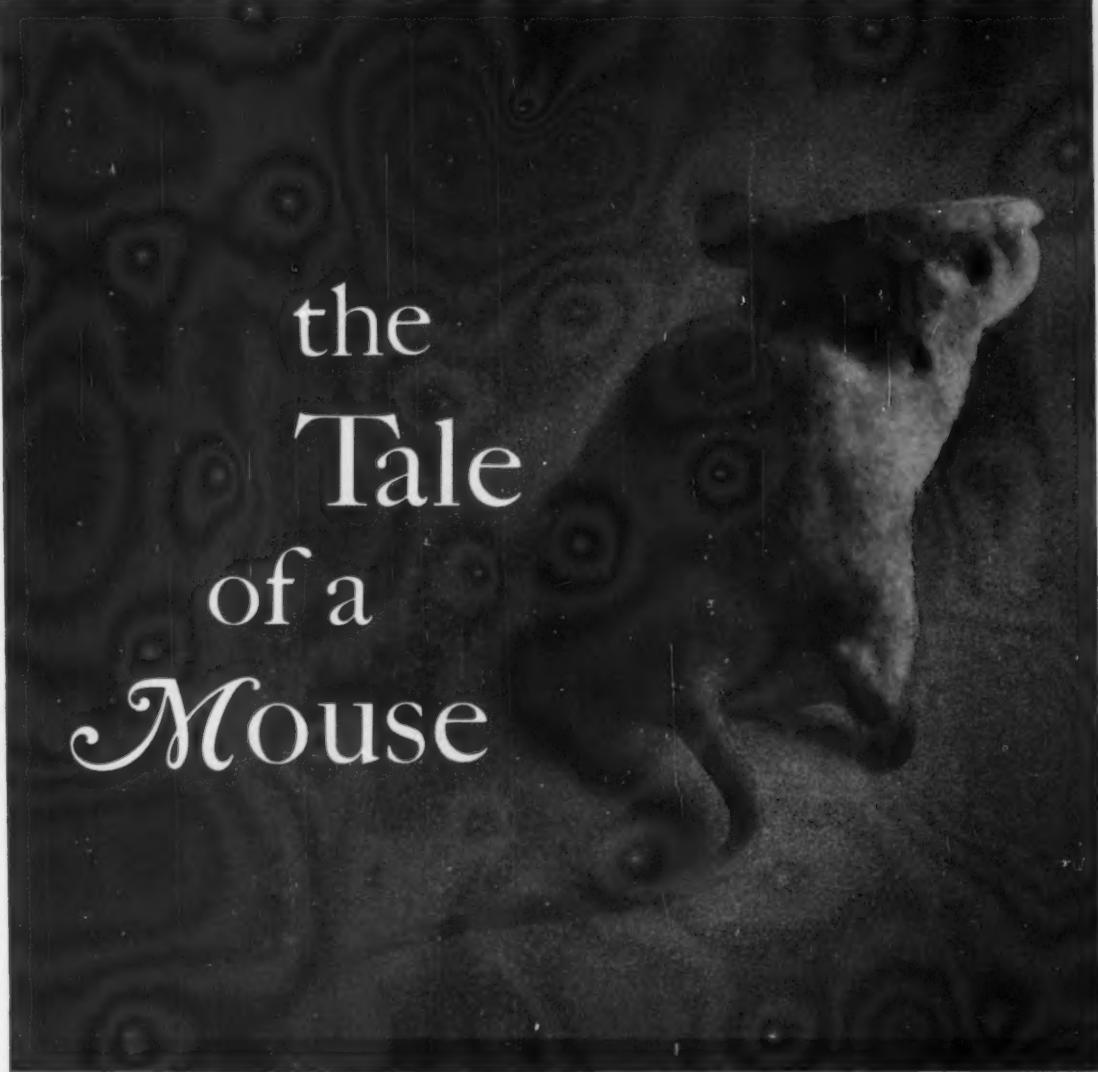
QUESTION I (a) Whom would you recommend?

NAME OF CONTRACTOR (in order of greatest preference to lowest preference)	CUSTOMERS (% of total response of your customers)	NON-CUSTOMERS (% of total response of your non-customers)

QUESTION I (b) may be further tabulated to show:

REASONS FOR RECOMMENDING	NAME OF CONTRACTOR			
	ABC	XYZ	ETC	TOTAL
Price	—	—	—	—
Location	—	—	—	—
Other	—	—	—	—

The remaining questions, 2 through 9, may be tabulated in the simple form of I (a). Then, relating the time of purchase, brand, service, advertising, etc. to the contractors from whom the equipment was purchased, the responses may be tabulated as in I (b).



# the Tale of a Mouse

Once upon a time, there was a mouse called Funnyfoot. He was given that name because his hind legs dragged. He had muscular dystrophy. Now Funnyfoot and his brothers and sisters are helping scientists find the cure for this crippling sickness. Won't you help, too? You can do so by contributing what you can to the

**MARCH FOR MUSCULAR DYSTROPHY**

**MUSCULAR DYSTROPHY ASSOCIATIONS OF AMERICA, INC.**

**1790 Broadway, New York 19, N. Y.**

In this modern supermarket

## Four Compressors Carry

RON HENRY, *associate editor*

FOUR COMPRESSORS provide all the refrigeration for a 12,000-sq.ft. supermarket equipped by Bay State York Co., Brookline, Mass., contractors.

As many as seven refrigerated cases or storage rooms are connected to a single machine, making this installation a distinct departure from the current trend toward a separate compressor for each refrigerated fixture.

Bay State realizes that it will be in hot water if a system gets a serious leak or if a compressor goes out. The management is convinced, however, that the likelihood of trouble can be minimized by careful installation, and that the advantages far outweigh the disadvantages.

The customer, one of the leading food chains in New England, is convinced too.

As is shown on the accompanying diagram and list of equipment, two of the compressors are used for medium-temperature fixtures and two for low-temperature fixtures. Should one compressor of either fail, the remaining compressor can carry the full load. Changeover is made by using a hand bypass in the suction, liquid, and discharge lines.

Medium-temperature compressors 1 and 2 each carry a capacity of 12 tons. Low-temperature compressors 3 and 4 each are  $2\frac{1}{2}$  tons. There's a 2-circuit air-cooled condenser used as the condensing medium for each pair of compressors.

This system is subjected to a peak refrigeration load only when the store first loads the fixtures. An electrical problem cropped up in one of the low-temperature compressors during testing of the equipment. When the entire low-temperature load was dumped onto one compressor, ample refrigeration was provided with no more than 3 or 4 degrees rise in temperature.

Once the electrical problem was corrected, the system was restored to normal operation. No additional refrigerant or oil was needed for either compressor.

Compressors 1 and 2 operate automatically through suction pressure control. Thus compressor capacity varies with the refrigeration load. Should there be an unusual demand there is enough capacity to maintain the fixture temperature. Each medium-temperature compressor has an evaporator temperature of 20 F, a condensing temperature of 110 F, and requires 14.9 kw input.

Compressors 3 and 4 operate at -30 F evaporator temperature, 110 F condensing temperature, and require 7 kw input.

The compressors, all of the accessible hermetic type, are installed in a central machine room at the rear of the store.

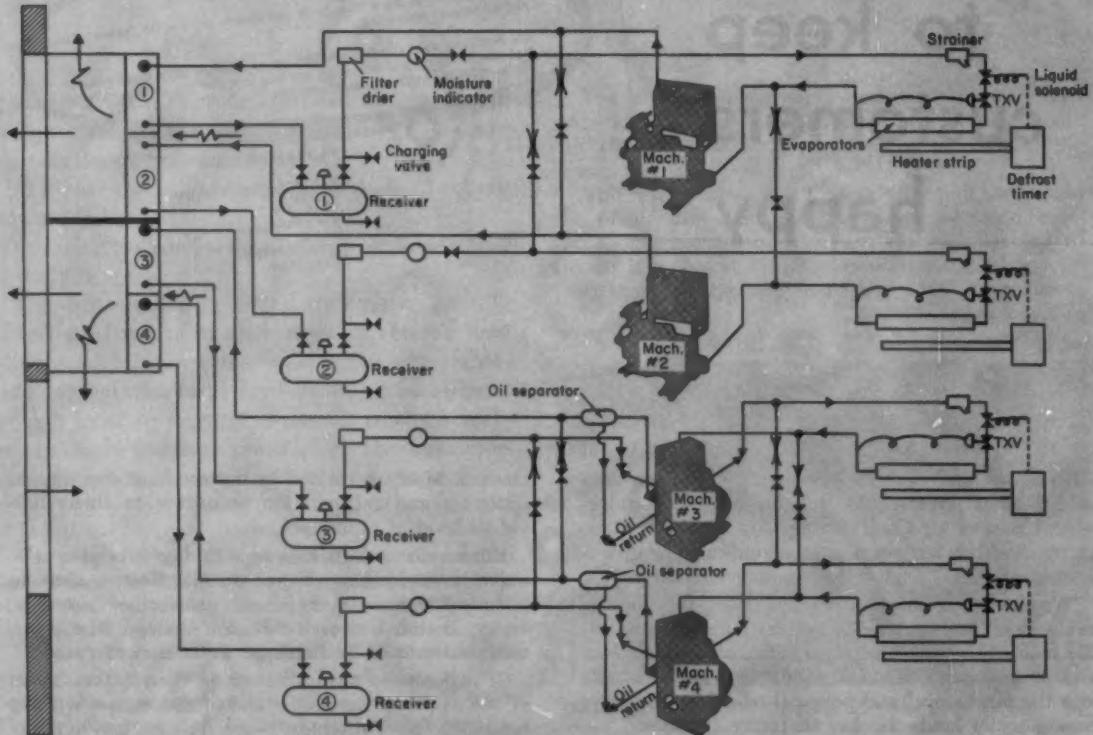
This system has many hazards. If a compressor fails, you have to switch immediately to the other machine. A leak in the system may lose all the refrigerant, affecting all fixtures within that group.

These are some of the precautions that Bay State takes during installation to guard against trouble once the system has been installed:

- Using dry nitrogen in brazing copper connections.
- Cleaning the system thoroughly.
- Evacuating the system as recommended by the manufacturer.
- Using an adequately-sized drier.

Advantages of the system include lower operating costs, lower installation costs, less area required for the machinery room, less equipment to maintain, and flexibility of compressor capacity.

# the Refrigeration Load



HERE'S THE HOOKUP OF THE 4-COMPRESSOR SYSTEM

#### MACHINE 1

**Medium Temperature**  
 Six 12' self-service meat cases  
 One 8' self-service delicatessen case  
 Five 12' 3-deck dairy cases

#### MACHINE 2

**Medium Temperature**  
 Two 8' self-service delicatessen cases  
 Four 12' self-service produce cases  
 One 15 x 11' produce box (two coils)  
 One 43 x 12' cutting room (six coils)  
 One 30 x 12' meat box (six coils)  
 Two 6 1/2 x 8 1/2' meat storage boxes (one coil each)  
 One 10 x 12' dairy box (two coils)

#### MACHINE 3

**Low Temperature**  
 One 14 x 10' freezer  
 Five 12' self-service frozen food cases

#### MACHINE 4

**Low Temperature**  
 One 12' self-service frozen food case  
 Three 12' self-service frozen meat cases  
 Two 12' self-service ice cream cases

# Train your servicemen to keep customers happy

INTENSIVE TRAINING in personality and tact goes hand-in-hand with technical know-how for servicemen of Boston Air Conditioning Co., Medford, Mass. An outside instructor comes in periodically to give a short course on the fine art of customer relations.

"We have a specific purpose in doing this for the serviceman," Robert Ritchie, service manager, told us. "He meets the customer many times, often when tact is extremely important. He should be able to handle both the mechanical and personal troubles. The serviceman really holds the key to future business."

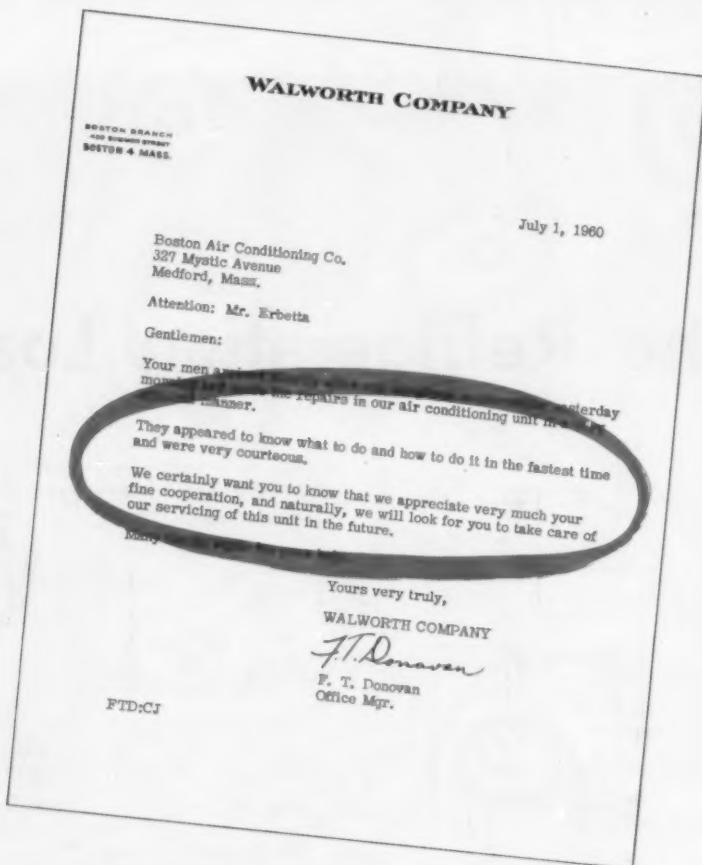
"This system has already paid dividends," asserts Ritchie. "Friction within the company has eased off, and we've been able to smooth out any squabbles that do come up much easier than before."

"When a serviceman seems bothered after running into an obstinate customer, he is soon able to understand them. Now he understands why some people are harder to get along with than others."

Customer relations is not the only training given to these servicemen. They are trained in two other areas—mechanics and design engineering. Here's a rundown on the entire training program:

**Mechanics:** Classes run from October through May, one evening a week for four hours. Men attend these classes on their own time. Serving as instructors with Ritchie are Gene Sasso, service supervisor, and Donald Grinnell, a service contract salesman.

There are apprentice, intermediate, and journeymen



courses. Men are trained in the mechanics of airconditioning and refrigeration according to their individual level of experience.

Ritchie also selects men to attend courses at nearby universities. Medford is just outside Boston, close to technical training centers such as Northeastern University, Boston University, Boston College, Massachusetts Institute of Technology, Tufts, and Harvard.

"The company always has stressed education, so all of our employees expect it and attend classes without hesitation," says Ritchie. "When hiring a new serviceman, we look to the appliance shops. We can get a man there and teach him to service larger and more complicated systems."

**Customer Relations:** Several years ago Boston Air Conditioning hired Dr. John E. Whitney, a free-lance lecturer, to give a public speaking course to their salesmen. This worked so successfully that Dr. Whitney was called back to drill switchboard operators in personality and tact.

Training servicemen was the next step. Ritchie says, "In his series of 10 lectures Dr. Whitney covers getting along with each other and getting along with the public. He explains reasons why people get upset. This helps servicemen rationalize customer behavior."

Servicemen talked of little else while the lectures were in progress, reports Ritchie. He says enthusiasm was high for a few months after the lectures ended.

*Continued on page 77*

# Market research paves way for new electronic air cleaner

WHEN A MANUFACTURER sets out to introduce a new product line in a highly competitive field there are two things he wants to know:

(1) what the contractor-dealers think of selling this product;

(2) what the contractor-dealers' customers think of using it.

The answers can be found through a carefully aimed program of market research. Here's how Minneapolis-Honeywell went about it when it decided to market a residential electronic air cleaner. (*If you want to learn how market research techniques can be put to practical use by the contractor-dealer, turn to the article starting on page 46.*)

**The preparation.** A check was made of contractor-dealers in three major cities selling competitive lines of electronic air cleaners, to find those doing the most active job. These dealers were interviewed.

Results: Dealers reported that they like to sell this product because they personally feel it fills a definite need in the home, and because it is a good profit item. They pointed out that it presents no difficult installation problems, except where space is critical or electrical connections prove difficult. They reported few service problems, but made it clear that this was one of their prime concerns. They expressed the opinion that the possibility of service calls was less with equipment using selenium rectifier power packs and permanent washable filter units.

Next step was to survey the customers of these contractor-dealers to find out how they rated the benefits of electronic air cleaning. It immediately became apparent that first cost was the biggest barrier to sales. Only where relief from dust and pollen allergies was important, it developed, could this price barrier be readily hurdled.

Next to allergy relief, homeowners definitely felt that the most attractive advantage of electronic air cleaning was that it made housework easier and cut home maintenance costs. An increase in personal comfort also was mentioned.

**The product.** Honeywell used these survey results to guide development of its new residential electronic air cleaner, which has just been introduced to the trade.

The first problem was to develop a unit that could be priced low enough to overcome the sales resistance of homeowners. The new Honeywell standard model is tagged at \$324.95. Counting installation, total cost to an average new home buyer will approximate

*Continued on page 73*



TALKING POINT FOR OWNERS of homes with Honeywell electronic air cleaners is this control panel mounted in the living area.



COMPACTNESS, FLEXIBILITY, and ease of installation appeal to dealers. Here a serviceman slides cleaning cell into unit mounted in base of up-flow type forced air system in customer's home.

# RECENT *Installations*

## Furnace Gets Custom Compressors

THE INDUSTRIAL DIVISION, American-Standard, has built and shipped a large dual compressor that provides both combustion and



cooling air in an iron ore pelletizing furnace. One of the blowers supplies combustion air for furnace operation, the other supplies air for cooling the pellets as they are discharged from the furnace.

The combustion air compressor is an 885-hp unit rated at 31,500 cfm at 6.0 psig discharge pressure and 3580 rpm; the cooling air blower is a 425-hp unit rated at 28,100 cfm at 3.0 psig discharge pressure and 3580 rpm.

## Airconditioning Helps Atom Subs

AIRCONDITIONING MADE POSSIBLE the underwater endurance records of the U.S. atom submarines Seawolf and Nautilus, says Lt. Cmdr. John H. Ebersole, who was aboard both subs on their trips. "Neither mark could have been set without cooling," he says.

Carrier units eliminated the cool, damp atmosphere that would have been present both in Arctic waters and in 130 F equatorial climates, and maintained a temperature of 73 F and a humidity of 52%.

## Remote Unit Cools Church

INSTALLATION OF A REMOTE AIR-COOLED UNIT has solved the airconditioning problems of poor water conditions and no inside space for equipment in the cooling of the First Methodist Church, Medicine Lodge, Kan. The contractor found a Dunham-Bush "LRCU" large condensing unit to be just the answer.

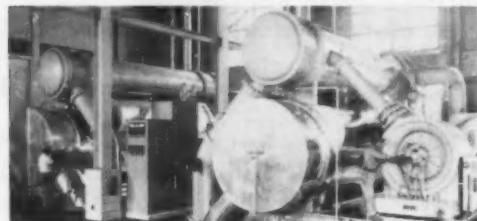
Unit consists of a semi-hermetic compressor, starters, and liquid receiver installed within the outside dimensions of a standard B blower condenser, and cools the church without water. Installed outside the church, unit has eliminated

installation costs of a built-up remote system and takes up less space than a cooling tower.

## Receives Contracts for 2 Buildings

TWO OF THE LARGEST OFFICE BUILDINGS in the country will be cooled by 14,200 tons of airconditioning supplied by Worthington Corp., which was awarded both of the contracts, totaling \$1.5 million.

The 59-story Pan Am Building in New York City has a refrigeration capacity of 10,000 tons.

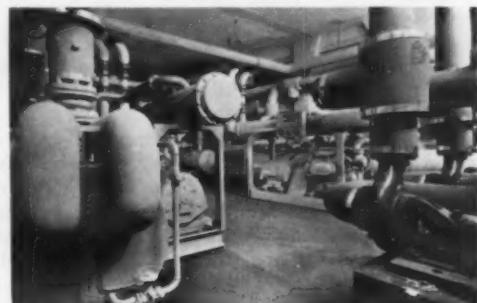


Equipment, weighing 100 tons, will be raised 775 feet to the roof.

The 44-story Humble Oil building, Houston, Texas, has a 4200-ton refrigeration capacity. All equipment will be on the roof of an adjoining 8-story garage, connected to the main building by an underground, airconditioned passage.

## Italian Arena Uses 1300-Ton System

CONI SPORTS PALACE in Rome, Italy, provides airconditioned comfort for athletes and fans alike with a 1300-ton cooling system, of which 850 tons are supplied by well water. This system includes four self-contained R-22 water



chilling units, each chiller incorporating an 8-cyl. "VMC" compressor. The arena, also known as Palazzetto dello Sport, is an all-weather sports palace seating 15,000.



## Another good reason it pays to sell SCOTSMAN!

This lineup of new Scotsman Ice Machines is undergoing a rigid test run at Scotsman's big plant in Albert Lea, Minnesota. Hour after hour, these Scotsman machines produce hundreds of pounds of ice. During this test, every working part is checked and rechecked to see that every unit is in perfect working order.

Then—and only then—are the Scotsman machines shipped out to the dealer and on to the customer!

This careful attention to the production

of Scotsman Ice Machines is only the first link in the chain of Scotsman service. Scotsman backs up its top quality machines with a sales and service group second to none in the industry. And to help you sell Scotsman Ice Machines, a giant advertising and merchandising program promotes faster sales and bigger sales to more and more markets!

Do you qualify for the Scotsman franchise so highly prized in the ice machine industry? Mail in the coupon today and get full information.

# SCOTSMAN

*Modernize with Modern Ice!*

## ICE MACHINES



**YES!** Send me complete information about a franchise for Scotsman Ice Machines.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

MAIL TO: **SCOTSMAN ICE MACHINES**

Queen Products Division, King-Seeley Corporation

191 Front Street, Albert Lea, Minnesota

EXPORT OFFICE: 15 William St., New York, N.Y.

THE REFRIGERATION & AIR CONDITIONING BUSINESS/JANUARY 1961

**A merchandising expert tells**

# How to get more sales from your salesmen

A MAN WHO CAN'T GET HIS CUSTOMERS to say yes takes the "sales" out of salesman. That's the opinion of a well-known sales consultant who says there are too many salesmen who don't know how to avoid getting a no answer.

Consultant Ben Smith says that any company's sales will increase if each salesman will tell the boss what he wants and what he'll accept in training. Smith believes that you, the boss, can get these answers if each of your salesmen takes a self-analysis test to help him find out why the customer didn't buy.

By analyzing the test results, you develop the use of five pointers — Smith calls them "Yes-Getters" — that will help your men close sales.

**Yes-Getter No. 1**—Ask questions, the kind that get the kind of answers you want, the kind that invite more questions.

**Yes-Getter No. 2**—Repeat your selling points. And while you're at it, use the customer's name constantly. Tie it to every question. Review and repeat the sales points that seem to interest the customer most.

**Yes-Getter No. 3**—Demonstrate your product. Then let the customer also do the demonstrating and he'll help sell himself.

**Yes-Getter No. 4**—Dramatize your sales presentation. Let the customer see what he's hearing. Let him feel the product.

**Yes-Getter No. 5**—Don't argue with or interrupt the customer. Wait for his answer and give him a chance to say yes.

To prove his point, Smith gave his test to a sample group of 158 salesmen who wanted to find out what they were doing wrong. Each man took the test on the facing page and each scored himself.

Results of this group test are shown on the repro-

duced check-list. Smith claims that the percentages of answers for the group to each question remain fairly constant, whether the test is given to a smaller group or to one as large as 2000 salesmen.

Try it on your salesmen. Let them tell themselves, not wait for you to tell them, where they are weak. Your company's sales program should emphasize the points where the men scored themselves lowest, and, therefore, where the most sales are lost.

Here is Smith's analysis of the answers given by the test group to each set of questions:

**"Maybe I Wasn't Prepared."** The salesmen need a better understanding of the customer's wants before the interview. They must plan their interviews better, and be ready to answer objections.

**"Maybe He Didn't Like Me."** Maybe he didn't because the salesmen are guilty of interrupting the customer and because they often fail to help the customer buy.

**"Maybe He Wasn't Interested."** Here there is a need for the salesmen to dramatize their sales talks so the customer can see and feel what he's buying. Most of the salesmen don't get to the customer's problems right away.

**"Maybe He Didn't Understand."** The salesmen need to give the sales talk in a few definite, simple points. They should also give their presentations in a more precise and logical order.

**"Maybe He Didn't Believe Me."** The biggest fault is the salesmen's failure to give the customer proof of product claims.

**"Maybe My Strategy Was Weak."** The salesmen didn't get the customer's agreement on one point before they rushed on to the next one.

How did your salesmen score themselves? ♦

## TRY THIS TEST ON YOUR SALESMEN

# Why Did I Lose That Sale?

A check-list to help you find why the customer said "No".  
Every "Yes" check mark made, made it easier for the customer to say "Yes".

### MR. CONTRACTOR:

The test results in this column are for your own guidance in analyzing the answers of your own salesmen. Tear off this column before giving the test to your men, so that they will not be influenced by these percentages.

	Yes	No	PERCENT	
			Yes	No
<b>MAYBE I WASN'T PREPARED</b>				
Did I know before the interview that the prospect needed what I had to sell? .....	<input type="checkbox"/>	<input type="checkbox"/>	53	47
Did I know whether the prospect had bought my product before? .....	<input type="checkbox"/>	<input type="checkbox"/>	60	40
Did I know the prospect's name? .....	<input type="checkbox"/>	<input type="checkbox"/>	88	12
Did I plan the interview, rather than waiting for inspiration after I got there? .....	<input type="checkbox"/>	<input type="checkbox"/>	56	44
Did I anticipate his objections? .....	<input type="checkbox"/>	<input type="checkbox"/>	53	47
Was I prepared to answer his objections? .....	<input type="checkbox"/>	<input type="checkbox"/>	63	37
<b>MAYBE HE DIDN'T LIKE ME</b>				
Was my appearance what it should be? .....	<input type="checkbox"/>	<input type="checkbox"/>	88	12
Was my talk free from signs of "pressure"? .....	<input type="checkbox"/>	<input type="checkbox"/>	76	24
Did I keep out of arguments? .....	<input type="checkbox"/>	<input type="checkbox"/>	78	22
Was I careful not to interrupt, not even once? .....	<input type="checkbox"/>	<input type="checkbox"/>	44	56
Did I show an interest in him and his business? .....	<input type="checkbox"/>	<input type="checkbox"/>	85	15
Did I forget I wanted to sell, and help the prospect to buy? .....	<input type="checkbox"/>	<input type="checkbox"/>	56	44
<b>MAYBE HE WASN'T INTERESTED</b>				
Did I start talking about his problems in the first sentence? .....	<input type="checkbox"/>	<input type="checkbox"/>	39	61
Did I stick to what my product would do for him? .....	<input type="checkbox"/>	<input type="checkbox"/>	65	35
Did I dramatize my talk so he could see what he was hearing? .....	<input type="checkbox"/>	<input type="checkbox"/>	59	41
Did I repeat the selling points in which the customer was interested? .....	<input type="checkbox"/>	<input type="checkbox"/>	71	29
<b>MAYBE HE DIDN'T UNDERSTAND</b>				
Was my talk in concise, logical order? .....	<input type="checkbox"/>	<input type="checkbox"/>	55	45
Did I tell enough of my sales story to help the customer understand? .....	<input type="checkbox"/>	<input type="checkbox"/>	69	31
Did I boil everything down to a few definite, simple sales points? .....	<input type="checkbox"/>	<input type="checkbox"/>	50	50
<b>MAYBE HE DIDN'T BELIEVE ME</b>				
Did I stick to the facts? .....	<input type="checkbox"/>	<input type="checkbox"/>	84	16
Did I inspire confidence by being sincere and enthusiastic? .....	<input type="checkbox"/>	<input type="checkbox"/>	85	15
Did I back up what I said with examples, figures, and visible proof instead of just making claims? .....	<input type="checkbox"/>	<input type="checkbox"/>	51	49
Did I answer his questions and objections? .....	<input type="checkbox"/>	<input type="checkbox"/>	83	17
<b>MAYBE MY STRATEGY WAS WEAK</b>				
Did I make his name an important part of the interview? .....	<input type="checkbox"/>	<input type="checkbox"/>	62	38
Did I make him realize his needs before I tried for a sale? .....	<input type="checkbox"/>	<input type="checkbox"/>	63	37
Did I ask questions to give him an opportunity to express his views? .....	<input type="checkbox"/>	<input type="checkbox"/>	72	28
Did I find the one sales point he was most interested in and concentrate on that? .....	<input type="checkbox"/>	<input type="checkbox"/>	58	42
Did I test his agreement on one point before going to the next? .....	<input type="checkbox"/>	<input type="checkbox"/>	49	51
Did I definitely ask for the order instead of just hinting at it? .....	<input type="checkbox"/>	<input type="checkbox"/>	61	39



## "We cool for pennies per hour with READY-POWER GAS Air Conditioning"

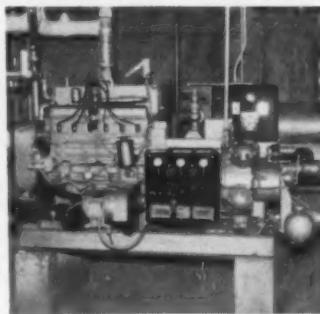
"We wanted comfortable air conditioning for our recreation center. But we also wanted low operating costs," states Mr. Walter Hosek, Chairman of the Building Committee of Sokol Zizka-SPJST Lodge No. 130 in Dallas. "That's why we chose gas-operated Ready-Power Air Conditioning. Although the initial cost is slightly higher than some other available types, we figure that this unit will more than make up the difference in a few years."

Mr. Hosek is so right. Ready-Power Gas Air Conditioning units achieve the lowest known operating costs. *Less than one cent per ton per hour!* Cooling is constant, as opposed to the

ON-OFF operation of other systems. *LOAD-MATCH CONTROLS* automatically adjust output and fuel consumption to actual cooling requirements. And thrifty gas keeps fuel costs low. Get all the facts on the unusual economy and efficiency of Ready-Power Gas Air Conditioning. Call your local Gas Company, or write to the Ready-Power Company, Detroit 14, Michigan.

*American Gas Association*

*This 60-ton, gas-operated Ready-Power unit gives Sokol Zizka in Dallas high efficiency air conditioning at lowest operating costs.*



 **FOR AIR CONDITIONING  
GAS IS GOOD BUSINESS!**

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JANUARY 1961/THE REFRIGERATION & AIR CONDITIONING BUSINESS

# *Applications* MANUAL

by Arthur H. Farr, consulting editor, airconditioning

## THE HEAT PUMP PRIMER—PART 12

IN THE FIRST 11 PARTS of this series of articles we have been examining the theory and technical aspects of the heat pump. Now, by means of a brief word picture of one of the world's largest packaged heat pump installations, we would like to show you what can be done when heat pump theory is put to work.

Sometimes the simplest approach to a large airconditioning problem is the most satisfactory.

Industrial buildings keyed to new technologies like the peacetime application of nuclear power have to be designed for rapid air changes. And the airconditioning systems for such structures must be more flexible than the buildings themselves, since proper ventilation is a requirement for safety as well as for human comfort.

In designing the airconditioning system for the new 250,000 sq.ft. facility of Atomics International, a division of North American Aviation, Inc., the emphasis was even more than usual on providing a flexible system. It was imperative

that the system be one that could be added to with ease when heat load or ventilation requirements changed in the various research and development labs with changing design interests, or when engineering or administrative staff requirements changed.

Airconditioning an industrial building, unlike a large office building with a static interior load, can be a complex problem if the answer must be provided with a central system. But the growth and acceptance of packaged heat pump equipment is offering designers a method of dividing up the problem into segments and matching the individual packaged units to the individual zone requirements.

Albert C. Martin & Associates, architects and engineers, used the packaged unit approach to the 1050 ton airconditioning load posed by Atomics International's Canoga Park, Calif., plant. The result was a complex system of 76 zones served by 76 separate air-to-air heat pump systems, each tailored to meet the design needs of the

zone served, and each capable of some degree of expansion or contraction should future load requirements change.

Capacity of the heat pumps selected varied from 5 tons in one zone to 24 tons in another. In some cases, more than one unit was used to supply conditioned air to a single space. In some zones where winter and summer load conditions were balanced, the packaged unit employed a normal heat pump configuration. In other zones where the cooling load was dominant, the unit incorporated two heat pump cycles plus an additional two cycles of straight cooling.

Use of roof-mounted heat pump packages not only solved the problem of providing system flexibility but also allowed economical building construction. Due to the relatively light weight of the equipment, minimum amounts of special roof bracing and platforms were required, thereby saving on steel and concrete, as well as labor costs. Roof mounting also eliminated the

*Continued on page 60*



MOUNTING PACKAGED HEAT PUMPS ON THE ROOF saves usable space in this industrial plant and cuts construction costs.

## HEAT PUMP PRIMER

need for several thousand square feet of covered building space normally set aside to house mechanical equipment.

Estimates made by the architect showed an expected saving of more than \$1.40 per sq.ft. for the heat pump installation in comparison to a single central system, with comparable reserve capacity of 20%, serving the entire project. When this standby capacity was eliminated from the calculations, packaged heat pumps still offered an advantage of at least \$1.10 per sq.ft. over a central system.

Since two of the three buildings were two stories high, a novel duct system was designed to provide the shortest possible duct runs from the roof, and to allow sufficient space for future expansion of the duct system.

Modular duct shafts run from the roof to the lower floor at intervals throughout the building. Nine shafts were required in the laboratory building. In general, each of these shafts houses two supply ducts, one for each zone. The duct shaft itself serves as the return air duct. Since the relative humidity in the Canoga Park area is extremely low, the supply ducts in the shafts did not have to be insulated.

Extra space was provided in the shafts to house additional supply ducts when and if they are required.

System requirements established by Atomics International's plant engineering department in the preliminary design studies demanded that the airconditioning system be:

- **economical**—First cost of the packaged heat pump system was more than \$200,000 below conventional central systems considered. Operating costs are still being accumulated.

- **flexible**—The use of individual units that can be expanded in capacity as required was one solution to this problem. The modular duct arrangement allowed this approach to be carried through in the distribution system.

- **accessible**—Roof mounting makes maintenance easier, does not disrupt building routine, and

eliminates problems of admitting service personnel to restricted areas in the plant.

- **space saving**—Putting the mechanical equipment on the roof meant that the only interior space lost to the airconditioning system was the 16 sq.ft. for each duct shaftway.

- **reliable**—Since most of the laboratory areas would involve the use of toxic, odorous, flammable, or radioactive materials, it was mandatory that the air supply system continue to function even if a compressor cut out. So the supply fans are arranged to operate continuously to maintain air pressure. Obviously, with multiple packaged units the loss of one fan would be far less serious than the loss of the supply blower of a central system.

Design conditions for the system were:

- **summer**—Conditioned areas to be maintained at 80 F, db, and 50% rh continuously, with design based on outside temperature of 100 F, db, and 72 F, wb, and a wind velocity of 8 mph.

- **winter**—Conditioned areas to be maintained at 72 F, db, with an outside design condition of 30 F, db, and a 15 mph wind velocity.

- **control**—Temperatures to be maintained within 2 degrees in all areas except in executive offices (1.5 degrees) and in the standards laboratory (1 degree).

- **sound**—Maximum limit to be 55 decibels flat response in most general areas, with the executive area held at 35 decibels maximum.

- **outside air**—minimum requirements to be 25% in non-critical areas, 50% in executive areas, and

100% in areas with radioactivity; return air ducts in radioactive areas to terminate in absolute filters, and air pressures within these areas to be held below those in surrounding areas to prevent any outward flow of air.

How well does this packaged heat pump system work?

During the first summer of operation (1960), the system was put through a critical test when outside temperatures set a record in the area. In the preliminary design stage the check of local weather data showed that the maximum outside temperature recorded in the previous eight years was 115 F. The equipment was not expected to operate in an ambient temperature exceeding 117 F, but on July 17 the ambient temperature in Canoga Park reached 116 F and the ambient roof-top temperature climbed to 128 F.

A few of the units supplying zones where 100% outside air was required cut out on overload, but were returned to service quickly by wetting the heat pump outdoor coil (condenser on summer cooling) with a fine water spray until the record temperature period passed.

**EDITOR'S NOTE:** This article ends the Heat Pump Primer series. From your response we know that many of you have found this original material both interesting and helpful. If you would like to see more of this type of information in THE REFRIGERATION & AIRCONDITIONING BUSINESS, just write to us at 812 Huron Road, Cleveland 15, Ohio, and let us know. In our book *The Reader Is the Boss!*



**MODULAR DUCT SHAFTS** run from heat pumps on roof down to conditioned areas, providing zone control. Two supply ducts run through each shaft, with shaft serving as return.

# Contractor ACTIVITIES

## McCarty Named To Lead RACCA

### In Drive To Cure Industry Ills

Walter McCarty of Chicago has taken over direction of the national Refrigeration & Air Conditioning



WALTER McCARTY

Contractors Association to spearhead a three-pronged drive to:

- (1) strengthen and solidify RACCA membership from coast to coast;
- (2) educate RACCA members to be better businessmen;
- (3) put an end to what the association considers poor business policies and practices at all levels of the industry.

McCarty, head of McCarty Bros. Equipment Corp. in suburban River Forest, Ill., was unanimously elected president of RACCA at its national convention in Miami, Fla., Nov. 19-22.

Elected to serve with him are Don Kissell, Los Angeles, Calif., 1st vice president; Brooks Reeder, Detroit, Mich., 2nd vice president; Robert Lafferty, Miami, recording secretary; Harvey Hottel, Washington, D.C., treasurer; and Joseph Marchase, Pittsburgh, Pa., sergeant-at-arms.

The new president has long been active in the Chicago chapter of RACCA as well as the national

association. He has served on the national RACCA board for the past year.

Six new directors, each to serve on the board for a two-year term, also were elected. They are: Ingvar Monsen, New Jersey; Harvey Miller, Chicago; William Moody, Texas; Kissell, Los Angeles. Hottel and Reeder were elected directors at large.

Norman Jensen has resigned as managing director of RACCA. No replacement has yet been selected, but the association's Washington, D.C., office is being maintained to carry on the activities of the national organization.

Next RACCA national convention will be held in Los Angeles in February 1962, in conjunction with the ARI Exposition.

This will be the first national RACCA meeting to be held on the west coast.

A blast at alleged direct selling practices of both manufacturers and wholesalers was aired in a resolution introduced by the Manufacturers and Wholesalers Relations Committee and unanimously passed by the convention.

This resolution was read by Daniel M. Brown, chairman of the committee and president of Chicago RACCA, immediately following his report on meetings between RACCA, Air-Conditioning & Refrigeration Institute, and Air-Conditioning & Refrigeration Wholesalers.

These meetings were held in Miami just before the RACCA convention.

The association has mailed copies of this resolution to all members, urging them to pass it on to customers, suppliers, and fellow contractors. The national office also

has sent every member a form on which to report details of any direct-to-user sales.

The resolution, after briefly reviewing the background of the direct-sale problem, declares it to be against the best interests of both the public and the industry, warns that RACCA will investigate each such sale reported, and makes it plain that the results of these investigations will be brought to the attention of the public, appropriate legislative bodies, and all members of the refrigeration and air-conditioning industry.

Keynote of McCarty's acceptance speech was a plea for increased cooperation between all segments of the industry and a united effort to get more of the consumer dollar spent for airconditioning and refrigeration products. "One way to do that," he declared, "is to see that the buyer gets the best value for the money spent on product and service. This means weeding out the kind of practices that result in higher costs for poorer products and poorer services."

### CRAC Registers Symbol

CRAC—the official symbol of the Certified Refrigeration and Air Conditioning Foundation—has been approved and registered with the U.S. government, announces L. P. Jacobsen, chairman.

The foundation operates under the Joint Journeymen & Apprentice Training Committee, composed of representatives of labor and those Southern California contractors who meet the highest standards of employee education and training. As the official emblem of the foundation, the symbol will identify the more than 150 airconditioning and refrigeration contractor-members in Los Angeles and Orange counties.

Prominently displayed on the symbol is this motto: "CRAC service doesn't cost—it pays".



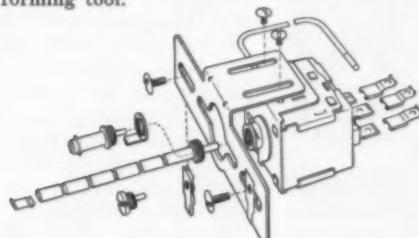
## ANOTHER NEW RANCO REPLACEMENT

**A11 (300 series) control** does the work of 54 different  
A11's now in use on refrigeration equipment

Designed to help you make on-the-job control replacements fast and easy, this new Ranco A11 replacement adjusts to fit 54 separate control installations. The dial shaft extension is adaptable to any required length. Capillary tube can be shaped to any desired requirement with Ranco's new capillary forming tool.

Adjust the mounting brackets and add terminal adapter clips if necessary. What could be simpler?

Add this new A11 to your A30 replacement inventory and you're all set for more than 90% of your job applications without costly callbacks. With Ranco replacements, you know it will be done right the first time! See your local wholesaler now.



**Ranco**<sup>®</sup>  
INCORPORATED  
COLUMBUS 1, OHIO

In Canada: Ranco Controls, Canada, Ltd., Toronto 18, Ontario

See us at the International Heating and Air Conditioning Exposition, Booth 855  
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# Don't neglect to clean hot water heating systems

A HOT WATER HEATING SYSTEM only needs to be cleaned once—but that once is important if you want the system to operate at peak efficiency. That's the experienced advice of Donald B. Gardner, an engineer for Bell & Gossett Co.

Best time for cleaning, he points out, is immediately after the installation is completed. This removes all impurities before they can cause any damage. The result should be a clean, neutral, water tight system that will operate indefinitely without further cleaning.

Unfortunately, however, where hot water heating is specified for office buildings, apartment buildings, or homes, the specifications all too frequently fail to include any provision for cleaning the system. The system may be drained for changes and adjustments following installation, but never actually cleaned.

It's easy to spot an unclean system. Here is a check list of symptoms. If any of these symptoms test positive, the system needs cleaning.

- Obviously discolored, musky, dirty water.
- Vented gases at high points in the radiation that will ignite and burn with an almost invisible bluish flame.
- A pH or alkalinity test that gives a reading below 7. Such a reading indicates that the water in the system is acid.

No matter how much care is taken in installation, some foreign materials usually do find their way into the system during construction. These materials may include pipe dope, thread cutting oils, soldering flux, rust preventatives or slushing compounds, core sand, welding slag, and dirt, sand, or clay from the job site.

Fortunately, in many cases the quantities of these materials that get into the system are so small they don't cause any real trouble. In some installations, however, there are enough of these materials present to break down chemically during operation of the system, causing gas formation and acid system water.

Hot water systems, in most cases, naturally operate with a pH of 7 or better. You can quickly check the condition of the water with "Hydrion" paper. This is

used in the same manner as "Litmus" paper except that it give specific readings which can be interpreted by means of a color chart on the side of the dispenser. Hydrion paper is inexpensive and you can get it from any chemical supply house or through your local druggist.

A system that tests acid (below 7 on the pH scale, and sometimes as low as 4) will usually have these symptoms:

- Gas formation (air troubles).
- Pump seal and gland problems.
- Air vent sticking and leaking.
- Frequent relief valve operating.
- Piping leaks at joints.

Once the system gets in this condition the symptoms will continue for years until corrected by cleaning. If the system is allowed to deteriorate until leaks develop and water losses increase, serious damage to the boiler may result.

Cleaning a hot water system (either steel or copper piping) is neither difficult or expensive. Trisodium phosphate, sodium carbonate, and sodium hydroxide (lye) are the most commonly used materials for cleaning. They are preferred in the order mentioned. You can get them at most paint and hardware stores.

Use only one type of cleaning material in the system, adding it to the water in the following proportions: trisodium phosphate, 1 lb. for each 50 gal. in the system; sodium carbonate, 1 lb. for each 30 gal.; sodium hydroxide, 1 lb. for each 50 gal.

Fill, vent, and circulate the system with this solution, allowing it to reach design or operating temperatures if possible. After circulating for a few hours, drain the system completely and refill with fresh water.

Usually enough of the cleaner will adhere to the piping to give an alkaline solution satisfactory for operation. A pH reading between 7 and 8 is preferred, and you can add a small amount of cleaner if needed to bring the solution back up to this point. ♦

# Wholesaler ACTIVITIES

## Hermetic Clinic Gets Good Response

"A ROARING SUCCESS"—that's how Jim Downs describes his clinic on hermetic motor compressors held last month. Downs heads Refrigeration Supplies Inc., Cleveland, Ohio. More than 275 servicemen attended the 2-day seminar.

The clinic was conducted by Ted Pihl, chief electrical engineer of Tecumseh Products Co., and Ivan T. Lindstrom, Tecumseh's assistant chief applications engineer.

In addition to the discussions, servicemen had adequate opportunity to examine an extensive display of special service tools for hermetic service and installation. On display were seven of the nine special test devices featured in the December 1960 issue of *THE REFRIGERATION & AIRCONDITIONING BUSINESS*.

"It's imperative that servicemen be able to use every piece of equipment we've got on display," said Downs. "This is the only way we will be able to wipe out the stigma of not being trained to handle today's complex systems."

Since the clinic attracted such a large turnout, Downs hopes to make it an annual affair. "At least 40 men stayed overnight Friday, but this did not surprise me. We tried a program like this several years ago and dropped it because of the inertia, although we had good attendance from out-of-towners. This time, I imagine a lot of men were sent, and had all expenses paid, by their employers."

Friday night Pihl discussed various types of motors and explained problems connected with them. He pointed out that manufacturers deplore the lack of knowledge of the serviceman, yet they don't make any effort to send information to the distributor or wholesaler.

"In fact," added Downs, "there's never been a manual for servicemen on hermetic compressors."

Lindstrom discussed the general aspects of pressure-temperature relationships and the selection of evaporators.

Saturday morning Pihl spoke on electrical components, emphasizing

overloads, relays, and motors. Lindstrom covered burnout replacement and moisture in the system. A question-and-answer period followed lunch.

Downs reports that some service test equipment was sold, and he obtained sales leads for others.

## ARW Gets 3 Members

Three companies have been signed by Air Conditioning & Refrigeration Wholesalers, bringing the 1960 total of new members to 27.

Latest to join were T.C. Glassman, Glassman Refrigeration Supply Co., Greenville, Texas; Buford Ennis, Remsco, Inc., Panama City, Fla.; and Lloyd Flick, Flick Supply Co., New Orleans, La.

## 5 Complete Course

Five members of Air-Conditioning and Refrigeration Wholesalers Association were among the 48 graduates of the second annual wholesale executive management course at Stanford University.



THIS DISPLAY of special service tools for hermetic service and installation attracted much attention during the clinic. Wholesaler Jim Downs (in white shirt facing camera) talks to servicemen.



TED PIHL (standing at right) of Tecumseh answers a question from the floor. Second main speaker at the clinic was Ivan T. Lindstrom, also from Tecumseh, who is seated at the table on the left.

# USEFUL Literature

Continued from page 12

including illustrations and standard and alternate bearings. There is one section on application modifications of the fans and another on methods of volume control.

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**18 TABLES** and other data on copper piping and copper tube products are featured in Publication B-1, released by Anaconda American Brass Co. The 58-page book has sections on water pipe corrosion, soldering and brazing suggestions.

circle 84 on reader service card

## LA CROSSE HAS 'EM!

### REACH-INS . . . WALK-INS AND COMBINATIONS.

#### KOOL-KLOSET

Combination walk-in, reach-in, KOOL KLOSET . . . for low cost, extra refrigeration space. Self contained refrigeration system, grey baked enamel exterior, 3" spun glass insulation, sizes 34" and 62" wide.



Metal Walk-In Cooler

Whatever the space . . . whatever the commodity . . . there's a top quality La Crosse WALK-IN that fills the bill. Rugged, dependable performance . . . year after year.

#### LA CROSSE COOLER COMPANY

3002 LOSBY BOULEVARD SOUTH, LA CROSSE, WISCONSIN

EXPORT OFFICE: 60 EAST 42nd STREET, NEW YORK • CABLE: EXPEDITE

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**A BEND AROUND TWICE ITS OWN DIAMETER** is one of the features of the "Armorox" thermocouple discussed in leaflet P1281A published by Bristol Co. Typical applications of the product are shown. Specifications of various thermocouples available are given with a table for ordering parts.

circle 85 on reader service card

**SUPERSEDING** Catalog 148A is a new general catalog, No. 160, published by Young Radiator Co. This 32-page 3-color catalog covers radiators, heat exchangers, air coolers, and airconditioning products. Includes a brief history of the company and an illustrated description of its facilities and services. Also has a complete product resume, including installation photos. Presents scientific, nuclear heat transfer applications stressing technical research development.

circle 86 on reader service card

## Have you tried the FLUX with the BULLDOZER action?

### LA-CO FLUX

REGULAR

for all general  
purpose  
soft soldering



#### NON-ACID • SELF CLEANING

To call La-Co Flux "self-cleaning" is almost like calling today's sports car "horseless carriage". La-Co Flux literally bulldozes right thru rust, oil and oxides, leaving the surface whisk-clean and ready: a perfect bond of solder is held much stronger than the tensile strength of the solder itself. It's one flux that works right thru protective coating on today's galvanized sheet. No cleaning, sanding, or scraping needed; all the muscle is built in. There's no safer flux, either—no acid of any kind, no danger of burns or fumes, no staining or pitting of metal. Comes in paste or liquid form, or in handy pencil-like Flux-stiks.

Look for La-Co at your supplier —  
or write on letterhead for sample.

Flux Problems? We'll be glad to help; no obligation

See Us At Booths 237-239  
HEATING & AIR CONDITIONING EXPOSITION



LAKE CHEMICAL CO.

3082 W. Carroll Ave., Chicago 12, Ill.

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## DOLE Heat-Cel

### LOW TEMPERATURE AUTOMATIC DEFROST RE-EVAPORATOR UNIT

**FAST HEAT TRANSFER FOR QUICKER DEFROSTING!**  
Heat for re-evaporation supplied by low wattage electrical element. Consistent, economical, performs in any ambient. Designed by specialists in the low temperature field. Get all the facts. Write for Heat-Cel engineering catalog.

**DOLE REFRIGERATING COMPANY**  
5942 NORTH PULASKI ROAD, CHICAGO 46, ILLINOIS  
103 PARK AVENUE, NEW YORK 17, N.Y.  
**DOLE REFRIGERATING PRODUCTS LIMITED**  
OAKVILLE, ONTARIO, CANADA



circle 14 on reader service card

THE REFRIGERATION & AIR CONDITIONING BUSINESS/JANUARY 1961



# Distributor ACTIVITIES

## Cawthon Elected NCRSA President; Membership Hits New High of 63

REPORTS OF CONTINUED GROWTH and progress highlighted the 14th convention of National Commercial Refrigerator Sales Association in New Orleans, La., in November. Membership of the group was announced at a new high with the addition of 63 new members, including its first foreign distributor, Refrigeration of Brussels, Belgium.

An outstanding convention feature was a round-table conference session at which members exchanged ideas and experiences on vital industry subjects. The previous day a panel presented a 5-part "Clinic on the Service Department" covering in detail every phase of service operation.

Theme of the 2-day meeting was "Successful Selling in a Changing Market."

The board of directors announced plans for additional association activities and surveys to advance the interest of members.

Dudley M. Cawthon was elected president. He's with Dudley Cawthon, Inc., Miami, Fla. Other officers named were Donald D. Denny, Modern Market Fixtures, Inc., Dayton, Ohio, 1st vice president; E. B. Ward, Baker-Ward, Inc., South Bend, Ind., 2nd vice president; H. E. Humphreys, H. E. Humph-

reys Co., Inc., Concord, N.H., 3rd vice president; and George A. Lucas, Allied Store Engineering Corp., East Hartford, Conn., treasurer.

Named as new directors, with terms ending in 1963, were Jack Burton, Fixturcraft, Inc., Nashville, Tenn.; Philip W. Herman, Allied Store Equipment Co., Minneapolis, Minn.; and L. C. Warren, Jr., L. C. Warren, Jr. Co., Atlanta, Ga.

Outgoing president Ray Winther was presented with a gift.

## Are 'Free Services' Really Free?

AS EVERY commercial refrigeration distributor knows, it has been customary to describe store planning or store engineering activities to the customer as free services that he gets along with his purchase of equipment.

This fact has been a point of considerable discussion at meetings of the manufacturer-distributor joint relations committee sponsored by National Commercial Refrigerator Sales Association and Commercial Refrigerator Manufacturers Association. Consensus is that these services aren't really free at all, and that it would be much better to refer to them by

## Revere Offers Film On Copper Tubing

"Copper Tube in Building Construction" is being offered by Revere Copper and Brass to distributors for exhibiting to contractor groups. This 30-minute, sound, color film, says Revere, is the first to cover the entire subject of good copper piping practice.

It is designed to interest contractors who must translate specifications into actual jobs on the basis of highly-competitive bids. The many advantages of Revere copper tube in building are shown.

some such such term as "available at no extra charge".

Here's how one manufacturer puts it:

"I'd like to voice my opinions on the so-called 'free' store engineering and store planning service offered by distributors.

"The very general misuse of this term adds substantially to the cost of doing business of most distributors throughout the country. It is not uncommon for a customer to obtain store plans from several different distributors, with the idea of combining the best ideas of each. He does this with the understanding that these plans are prepared free for him.

"Obviously nothing that requires time or material is free. The sooner all distributors in the industry make an effort to convince customers of this fact, the sooner progress can be made toward making legitimate charges for goods and services as rendered.

"This idea could be promoted in literature and in advertising. If distributors all over the country would continually talk up this concept, they would gradually educate the customer to the true facts of life regarding these 'free' services."



NEWLY-ELECTED OFFICERS of National Commercial Refrigerator Sales Association are (seated, left to right) H. E. Humphreys; Donald D. Denny; Marie Lawton; Dudley M. Cawthon; and George A. Lucas. Standing, left to right, are Jack Burton; Cedric Evans; L. C. Warren, Jr.; Dick Rauch; Wilbur Hoyt; James Scatena; and Foster Van Cleave.

# Product DATA

Continued from page 26

onds. Meter accuracy is 2% of full scale. Synchronous motor-driven mechanism insures perfect timing. Voltmeter measures 3% x 5% x 4% and weighs only 3 lb. Comes complete with handle or panel-mounting hardware, power cords, and operating instructions.

circle 128 on reader service card

## Phase sequence indicator

**Product:** Miniature portable instrument for indicating phase sequence in 3-phase power systems (Models 40A, 44A).

**Manufacturer:** Associated Research, Inc., Chicago, Ill.

**Features:** Each model weighs only 11 oz. and is 37% smaller than models 40 and 44. New instruments are 2% x



1% x 4". Provide positive phase sequence indications, and instant reading insures proper motor rotation. Model 40A designed for 60-cycle circuits and has switch for adjustment to 120, 240, and 480 v. Model 44A for use on 400-cycle circuits.

circle 129 on reader service card

## Water fountain

**Product:** Model SR-WF drinking water fountain.

**Manufacturer:** Sunroc Corp., Glen Riddle, Pa.

**Features:** Supplies uncooled water or water cooled by its self-contained cool-



ing unit. Can easily be refrigerated after installation. Is semi-recessed and all stainless steel. Measures 14 x 17% x 8% and has 5 gph capacity. Small cooler is inserted under basin by removing fountain apron. Has chrome-plated bubbler guard and pushbutton hand control. Glass filler is optional.

circle 130 on reader service card

## Air-cooled airconditioner

**Product:** "Luxaire" self-contained, air-cooled airconditioner in 2 and 3 hp sizes.

**Manufacturer:** C. A. Olsen Mfg. Co., Elyria, Ohio.

**Features:** Is a complete unit, housed in a single cabinet for location inside



building, in attic or outside building with ducts projecting inside. Condenser air intake and discharge at one end of cabinet, while evaporator coil, centrifugal evaporator blower, and blower motor are at opposite end. Cooling capacity of 2

Continued on page 68



## a new, economical, low temperature insulation

Uni-Crest is an extremely light-weight homogeneous white material with a smooth, tough surface. It is composed of minute, individually closed cells, produced by expanding beads of polystyrene. Its inherent properties make it an excellent low temperature insulating material.

Uni-Crest has a low K factor (thermal conductivity) and retains its insulating value indefinitely. Lightweight, strong, flexible, it has

excellent bonding characteristics, is non-dusting and non-flaking, and can be cut and handled easily. Uni-Crest is inexpensive, too.

Uni-Crest is available in widths up to 4', lengths to 12', and thicknesses from 1" to 8". Self-extinguishing Uni-Crest is also available in the same sizes. Write today for complete specifications and installation information.

# UNI-CREST

7 Central Avenue, Kearny, New Jersey

DIVISION UNITED CORK COMPANIES

Since 1907

UNI-CREST

Engineering offices or approved distributors in key cities coast to coast.

circle 56 on reader service card

circle 8 on reader service card

**Head pressure DOWN**  
**operating efficiency UP**  
**with anco**  
**condenser cleaner**

**ANCO Condenser Cleaner** removes scale and rust from condensers within 2 to 15 hours, depending on scale thickness and composition. Following application, head pressure drops to normal and the condenser's efficiency is restored. Simply dissolve this dry formula in sump while system operates. It works quickly and safely and is equally effective in evaporative condensers and those with separate cooling towers. Ask your supplier about it.



SPECIALIST IN MAKING WATER BEHAVE

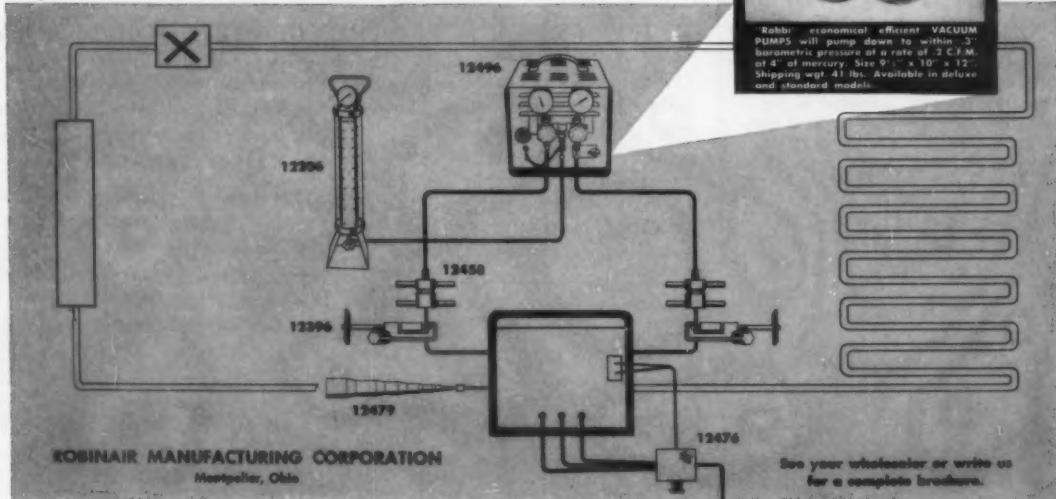
**Anderson**  
Chemical Company, Inc.

Box 1424 • Macon, Georgia  
Memphis, Tenn. • Box 2432 • DeSoto Station

**"Robbi"**



**factory approved tools  
for exploding component  
change market**



circle 44 on reader service card

driven tube-axial types for use where air-straightening vanes not required. Capacities at zero static pressure range from 3220 to 72,500 cfm. Includes airfoil fan wheels, flanged heavy gage casings, and sealed prelubricated bearings. Optional features are aluminum fan wheels, protective coatings, inlet and outlet cones, and adjustable sheaves for belt-driven units.

circle 132 on reader service card

### Heat pump

**Product:** "Wether-Bee" heat pump that uses heat collecting and dissipating coils, one in earth and one exposed to air.

**Manufacturer:** Heat Pump Systems, Inc., Aurora, Ill.

**Features:** In summer, heat is removed and rejected by system into ground where it is stored until winter. In winter, pump extracts heat from sunlight and stores excess Btu's in earth for cooler days. Installs in upright, counterflow, or horizontal position. Also manufactured as water source unit for water or air distribution.

circle 133 on reader service card

### Room airconditioners

**Product:** "Bohn-Aire" series of remote individual room airconditioners.

**Manufacturer:** Danville Div., Bohn Aluminum & Brass Corp., Danville, Ill.

**Features:** Series has four units in five sizes from 200 to 600 cfm with cabinets



that can be semi-recessed up to 3 1/2". Have removable filters and motor-fan assemblies, 3-speed pushbutton controls. Accessories include adjustable grilles, auxiliary drain pans, and inlet plenums.

circle 134 on reader service card

#### Saddle valve

**Product:** Access saddle valve (Type AS).

**Manufacturer:** Watsco, Inc., Hialeah, Fla.

**Features:** This brass fitting is shaped to fit all popular tube sizes for charging, discharging, and testing. May be attached to any portion of suction and/or discharge line by silver brazing, using solder supplied with each valve. Only when unit requires servicing does it become an access valve.

circle 135 on reader service card

#### Low-temperature insulation

**Product:** "U-200" rigid urethane closed-cell foam for low-temperature insulation.

**Manufacturer:** Fibrous Products Div., Union Asbestos & Rubber Co., Bloomington, Ill.

**Features:** Is a polyester urethane foam blown with fluorocarbon gas. K factor at 70 F is 0.14. Comes in half-round sections, each section 36" long. Available in nominal thicknesses and in standard pipe and tubing sizes. Also comes in 12 x 36" block form. Temperature limits are -300 to 220 F. Has an 85% closed-cell content.

circle 136 on reader service card

#### Electric humidifier

**Product:** Type 50-810 electric humidifier.

**Manufacturer:** Mueller Climatrol, Div. of Worthington Corp., Milwaukee, Wis.

**Features:** Evaporates 28 qts. of moisture per day at maximum setting. Twin water pan assembly located entirely within furnace plenum or duct system and all water is evaporated in direct path of air stream. Has counter-balanced water pan which activates micro-switch and solenoid water valve to control water level. Adjustable spring determines height of water in pan. Controls located within a separate compartment for protection against heat and moisture. Electric element is self-descaling and features

Continued on page 70

circle 54 on reader service card

#### AN ADJUSTABLE REPLACEMENT FOR HERMETIC UNIT CONDENSER FAN ASSEMBLIES

#### THE TRANS AIRE MOTOR FAN BRACKET ASSEMBLY

The Transaire M.F.B. provides a single stock, all purpose solution to the replacement problem created by the great variety of condenser fans on all hermetic units.



• ADJUSTABLE TO WIDE VARIETY OF MEASUREMENTS—POSITIVE LOCKING AT ANY POSITION

• PERMITS USE OF ORIGINAL MOUNTING HOLES WITHOUT REFERENCE TO MODEL OR CATALOG NO.

• IMPELLER FAN AVAILABLE IN 4 DIFFERENT SIZES

• DUST PROOF MOTOR, RUBBER MOUNTED

• GUARANTEED FOR ONE YEAR

Write for details and prices (Give your wholesaler's name)

#### TRANS AIRE MFG. CO.

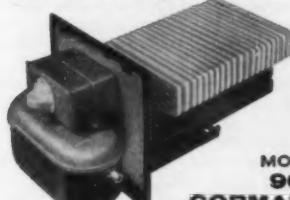
Div. of Penn Electric Motor Co., Inc.  
3080 Emerald St., Philadelphia 34, Pa.

Serving the refrigeration industry since 1928

**Shuttle**

#### ELECTRIC HUMIDIFIER

**Provides controlled humidification during entire heating season!**



MODEL  
900  
CORMAIRE

THE NEW PACKAGE HUMIDIFICATION SYSTEM. Used as a 20 Vapoglas plate humidifier, the Model 900 Cormaire under normal conditions provides adequate humidity in the spring and fall. As a controlled humidifier, the output can be increased by setting the cycling switch that controls the electric heating element.

As a completely automatic humidifier, a line voltage humidistat can be used or a low voltage built-in humidistat with relay transformer, which are available as optional equipment.



As an added feature, a Hygrometer is furnished with every Model 900 Cormaire.

Designed for the larger home, this quality built-in humidifier can be a profitable item for you.

Write today for complete information

**Shuttle MANUFACTURING CO.**

Milford, Michigan

circle 47 on reader service card

THE REFRIGERATION & AIR CONDITIONING BUSINESS/JANUARY 1961

For any refrigeration or air conditioning application which requires liquid circulation, specify a Little Giant Pump. Little Giants operate when completely submerged, are easy to install and require no costly maintenance.



ILLUSTRATED NO. 2-HOODED

FOR COMPLETE SPECIFICATIONS, WRITE:

**Little Giant**  
PUMP COMPANY

A Division of Little Giant Corporation  
3810 N. Tulsa, Oklahoma City, Okla.

circle 32 on reader service card

# Product DATA

tures "incoloy sheath" for corrosion protection. Unit is controlled by low-voltage circuit.

circle 137 on reader service card

## Hydronic connectors

**Product:** Copper "Form-A-Line" hydronic connectors and nipples.

**Manufacturer:** Cobra Metal Hose, Chicago, Ill.

**Features:** Designed for use on all wet heat systems. Flexible. Can be formed by hand to connect radiators, pipes, expansion tanks. Blue line running length of metal hose section identifies for use for wet heat.

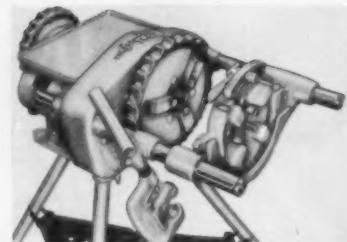
circle 138 on reader service card

## Power twister

**Product:** Model 101 portable power twister.

**Manufacturer:** Nye Tool Co., Chicago, Ill.

**Features:** Has balanced yoke and gear drive providing direct connection between twister and thresher. Yoke han-



dles geared stock for threading pipe and conduit 2 1/2" through 4". Saddle assures perfect threading alignment, handles die heads 1/2, 3/4, 1, and 2", and provides accuracy without use of a guide. Drive can be mounted on bench, truck, or tripod stand.

circle 139 on reader service card

## Servicing cart

**Product:** Portable refrigeration servicing cart for servicing refrigeration and airconditioning systems (Model ACE-330).

**Manufacturer:** Accessory Controls & Equipment Corp., Windsor, Conn.

**Features:** Will service all types of systems using R-12, R-22, R-114. Is mounted on steerable running gear and includes pressurizing, charging, and vacuum hoses. Stores dry air or nitrogen at 3600 psi and has surface-mounted instrument panel for easy operation. Pressurizes system and has a leak-check. Evacuates system to a low vacuum and adds refrigerant-holding charge, liquid or gas.

circle 140 on reader service card

## Intercom system

**Product:** Commercial intercommunication system combining up to 16 stations.

**Manufacturer:** Talk-A-Phone Co., Chicago, Ill.

**Features:** Is interchangeable with 8-station system to provide complete intercom and radio facilities for all interior and exterior areas. Design makes it adaptable for specific use in any room. Uses no tubes, emits no heat, and does not mar or damage walls. Employs a transistor circuit and can be flush- or surface-mounted.

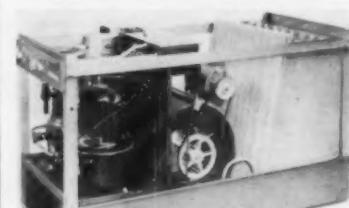
circle 141 on reader service card

## Condensing unit

**Product:** "Rheemaire" condensing unit (Model RA-110).

**Manufacturer:** Home Products Group, Rheem Mfg. Co., New York, N.Y.

**Features:** Has dual circuits and twin



Also available in Standard Model with single scale.

# MARSH

## Refrigeration Instruments

Gauges • Thermometers • Valves

circle 33 on reader service card

hermetic compressors. For use in airconditioning of two areas, each with its own air handler or for two-stage cooling. Time delay relay prevents both compressors from starting at same time. With air film condenser and the dual compressors, unit operates on single-phase service.

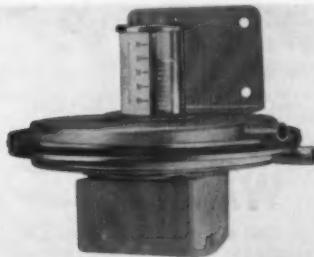
circle 142 on reader service card

### Pressure switch

**Product:** Differential pressure switch. (No. 1630 series).

**Manufacturer:** F. W. Dwyer Mfg. Co., Michigan City, Ind.

**Features:** Designed for accurate and reliable control in pressure ranges too low for conventional switches. Repetitive accuracy is within 1%. Switch suitable for low air velocity detection, control of air curtain systems, counting devices, and monitoring of pressurized rooms or areas. Set point visible on scale marked in inches of water, and special diaphragms for



extremely low temperatures or "fail safe" pilot lights available.

circle 143 on reader service card

### Electronic ionizer

**Product:** "Ionator" electronic ionizer that purifies air and puts negative ions into it.

**Manufacturer:** Emerson Radio & Phonograph Corp., Jersey City, N.J.

**Features:** Designed as a portable health appliance that cleans and ionizes the air, removing by electrostatic precipitation foreign particles and pollutants down to less than .0002" dia. Also charges the purified air with negative ions.

circle 144 on reader service card

### Miniature control unit

**Product:** Miniature temperature reset sequence switch control unit.

**Manufacturer:** Automatic Devices, Div. of American Machine & Metals, Inc., Sellersville, Pa.

**Features:** Can be used in any heating or cooling or other control circuit where series of two or more separate circuits is to be energized at selected changes in temperature or pressure; with multiple compressors, or to effect multi-stage operation of single compressors. Engineered to compensate for ambient temperature changes occurring along con-

Continued on page 72

## STOP NOISY JITTERS

Control  
VIBRATION and NOISE  
in Your REFRIGERATION and  
AIR CONDITIONING INSTALLATIONS

NEW  
LOW  
COST

**FABC****EL**

NEOPRENE *Pads*  
Patent Applied For

AFFORD MAXIMUM STABILITY  
Easily Installed

Just cut to shape and size from standard 18" x 18" FABCEL sheets. Slip into place and check the difference.

Write for new catalog

**FABREKA PRODUCTS CO., INC.**

1190-R Adams Street  
Boston 24, Mass.

Representatives in Principal Cities  
In Canada: International Equipment Co., Ltd.  
Montreal, P.Q.

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THE REFRIGERATION & AIRCONDITIONING BUSINESS/JANUARY 1961



## COMFORT-AIRE HEAT PUMPS

### COMFORT-AIRE QUIET-EFFICIENT HEATING OR COOLING

Self-Contained Models 2 H.P. thru 5 H.P. You'll get more heating and cooling, less service call backs from this field proven equipment.

Visit us at Booths 629-31  
International Show  
Chicago, Feb. 13-16, 1961.

**Comfort-Aire**  
HEAT CONTROLLER, INC.  
JACKSON, MICHIGAN

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circle 12 on reader service card

# COLDIN REFRIGERATORS SELL EASIER • FASTER MORE PROFITABLY

Coldin Commercial Refrigerators are designed for action and satisfaction. Elegant styling plus quality-controlled custom construction makes them the outstanding line. Franchise facts available. Write today!



Your Key to  
Better Refrigeration

**COLDIN**  
CABINET CO., Inc.  
2800 Webster Ave., N. Y. 58, N. Y.

# BLAST

SCALE . . . SLIME . . .  
SLUDGE . . . ALGAE . . .

but SAVE the EQUIPMENT!

For Easier Work . . . More Satisfied  
Customers . . . DEMAND . . .

**VAPCO SCALE REMOVER**

The SAFE cleaner in powder form!

**VAPCO-HIB**

For those who "Make Their Own" cleaner!

**VAPCO-PHOS NUGGETS**

To keep cleaned jobs really clean!

**VAPCO SLIME-X**

To knock out algae and slime!

**VAPCO Ice Machine Cleaner**

Safe for all makes and models!

Complete literature on request

or see your dealer — TODAY!



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circle 61 on reader service card

## WITT REMOTE AIR COOLED CONDENSERS



### With The Low Silhouette

Efficiency, economy, dependability—those three words most effectively describe the operation of Witt Air Cooled Condensers. Available in a wide range of centrifugal blower and fan type models, for single or multiple compressor installations, for indoor or outdoor applications, you'll find a Witt Air Cooled Condenser to handle any size air conditioning or refrigeration system. Winter control systems available for low temperature areas—multiple circuiting available at no additional charge.

Write For Complete Witt Catalog

A. H. WITT COMPANY, INC.

940 N. Sycamore Ave., Los Angeles 38, Calif.

## Product DATA

necting capillary and at the head. Companion current "outage" available to progressively cut in heavy loads following current break.

circle 145 on reader service card

### Small diameter fitting

**Product:** "Conoseal" tube and pipe fitting for small diameter sizes from  $\frac{1}{8}$  to 1" o.d.

**Manufacturer:** Marman Div., Aerquip Corp., Los Angeles, Calif.

**Features:** Designed to withstand extreme low or high temperatures and high pressures or vacuum where leak-proof



sealing is a requirement. For applications from -450 to 1500 F, pressures to 16,000 psig. Suited for joining pneumatic, hydraulic or fuel lines, cooling and heat transfer lines and pressure or vacuum lines. Can also be used as transition joint to connect dissimilar metals.

circle 146 on reader service card

circle 59 on reader service card

## NEW! WABASH

### Micro Dri DRYERS

Filled with Davison  
Microtraps!

A MOLECULAR SIEVE



- Amazingly high capacity even at high temperatures.
- Huge screen areas for low pressure drop.
- All brass.
- 5 sizes to 15 tons.
- Small and compact.
- Complete with forged flare nuts.

Write for Complete information and prices

## WABASH CORP.

2300 S. Western Ave., Chicago 8, Ill.  
EXPORT DEPT.

13 E. 40th St., New York 16, N.Y.



## COVERS EVERYTHING

...for testing and servicing air conditioning and refrigeration equipment!

When you specify AIRSERCO PRODUCTS you are buying "THE STANDARD OF THE INDUSTRY" in ...

- TESTING INSTRUMENTS
- PRECISION VISUAL MEASURING EQUIPMENT
- HIGH VACUUM PUMPS, GAUGES, AND ACCESSORIES



Airserco is the "complete line". See your wholesaler or write us for complete catalogue.



"AIRSERCO...creative leader of the industry since 1933."

AIRSERCO MANUFACTURING CO.

PITTSBURGH 13, PENNSYLVANIA, U.S.A.

Airserco has built more refrigeration testing equipment than any other company in the world.

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JANUARY 1961/THE REFRIGERATION & AIRCONDITIONING BUSINESS

### Prof. Know How's CORNER

#### AIRSERCO PRODUCT OF THE MONTH



Airserco Hermetic Compressor Opener

## BUSINESS *Briefs*

Continued from page 10

Two night classes and one day class are being conducted at Central High School, Syracuse, N.Y. A second pilot operation may be started in Columbus, Ohio, with the beginning of the second semester. By the end of the school year the committee hopes to be in a position to spell out all of the requirements for carrying out this kind of teaching in a public high school.

Emphasizing the need for the training program, Meling declared: "If we could get the men to install and service our equipment, we could double our volume. Unless twice as many people are trained for this work during the next decade as are available now, the expansion of the industry will be seriously hampered."

Semi-annual meeting of American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. is to be held Feb. 13-16 at Conrad Hilton Hotel, Chicago, Ill. Program features series of four technical sessions, five symposiums, conferences, forums, and committee meetings.

New standard test code for all air moving devices is available from Air Moving and Conditioning Association. Code, published as Bulletin 210, establishes uniform methods for conducting tests on all



**OFFICIAL PRESENTATION** of operating license is given by Harry C. Gurney, president of National Warm Air Heating and Air Conditioning Association, at left, to Clifton D. Newell, president of Buffalo, N.Y., indoor comfort bureau.

## OPPORTUNITIES

**Classified Advertising Rates:** \$20 for first column inch; \$15 for each additional column inch or fraction. All classified advertising payable in advance.

### LINES AVAILABLE

**REFRIGERATION SALESMEN:** Add to your income and do a bigger creative selling job with supermarkets and other retail food stores. New, fast moving line of supermarket mural signs and giant wood letters—the latest ideas in modern store interior display. Top commission and promotional aids. H. R. INC., 45-02 Ditmars Blvd., Long Island City 3, N.Y.

### EQUIPMENT FOR SALE

10 H.P. COMPRESSOR, accumulator, and related heavy duty ammonia equipment, used. Must sell quick, no reasonable offer refused. HALLOCK'S, 61 Washington St., Middletown, Conn.

types of air moving equipment and is designed to provide more accurate data upon which equipment performance ratings may be based.

### RESEARCH PAVES WAY

Continued from page 53

\$350. For owners of existing homes, added costs will push the installed price up to an average of \$400.

To deliver the other benefits that homeowners want and expect in an electronic air cleaner, Honeywell engineers came up with a true two-stage electronic air cleaner with efficiency, in the standard model, ranging from 90% at 800 cfm to 70% at 1400 cfm. A larger model provides comparable efficiencies at up to 2200 cfm. This means that the cleaner removes a high percentage of airborne dirt particles such as dust, soot, lint, bacteria, fly ash, fungus spores, and cooking and tobacco smoke.

To make the cleaner easy to install it is delivered to contractor-dealers as a completely packaged unit. After it has been mounted in the return air plenum immediately ahead of the fan compartment it is only necessary for an electrician to make some simple 120-volt wiring connections to complete the job. No plumbing is required.

Another aid to installation is the unit's compactness and flexibility.

It is only 8" wide, 22" high, and 31" long. It can be mounted in any position—vertical, horizontal, or at an angle—with airflow from either side.

To provide long, trouble-free life the cleaner was designed with selenium rectifiers instead of vacuum tubes, and a permanent washable filter unit. The system is tested for 10-year life and carries a 1-year warranty.

When service is required, simplicity of the cleaner design makes it a snap, thus easing the contractor-dealer's biggest worry about selling this type of equipment.

Included in the package are an electronic air cleaning cell assembly, a protective screen, an airflow distribution screen, a built-in timer, and safety switches. Hinged door to the unit holds the power pack and timer. Safety switches automatically turn off all power when door is opened. Both cell assembly and door can be replaced as complete units if necessary, without need for tampering with electric wiring.

Maintenance by the homeowner is made easy by a signalling device that indicates when the protective screen needs to be cleaned with a brush or vacuum, and a simple washing kit for the electronic cell that is provided with every cleaner sold.

Most significant of all, the M-H electronic air cleaner is provided with a control panel designed for mounting in the living area of the home. This 5 x 7" panel tells the homeowner when the air cleaning cell should be removed and washed, indicates if the unit is operating properly, shows if the protective screen is clogged, and makes it possible to turn on the heating-cooling fan remotely. And above all—like the Honeywell Weather Station and the Carrier Climate Center control panels for residential airconditioning systems—it gives the homeowner something to talk about. He not only knows the air in his home is clean, but he can demonstrate this fact to guests by pointing out the features of the control panel.

**YOUR WHOLESALER  
CAN SERVE YOU—LET HIM!**

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## People ON THE MOVE

Minneapolis-Honeywell Regulator Co. promotes Arthur O. Dietrich to manager, advertising and sales promotion for industrial operations; Dean B. Randall to director, advertising and sales promotion; and Charles W. Bowden to industrial sales manager, international division.

Bert Natkin, 50, died Oct. 24, 1960 in White Plains, N.Y. He was manager, New York apartment house sales, Hot Point Div., General Electric Co. Joined GE in 1950 in sales division of airconditioning and formerly was manager, project and national account sales.

Carrier Air Conditioning Co. names Philip F. Little as consultant for special applications, centrifugal refrigeration machines. He was supervisor, refrigeration machinery section in application engineering.

Frank M. Russell becomes national accounts sales manager at Acme Industries, Inc. with headquarters in New York City. He was district manager, national account

and government sales with Airtemp Div., Chrysler Corp. New northern regional manager is Peter Butterfield. He's been a sales engineer in the firm's New York regional office.

Welbilt Air Conditioning & Heating Corp. names John E. Craig general sales manager, including promotion and advertising. He was sales manager for packaged cooling products for Crane Co.'s air-conditioning and heating division.

Walter T. Miller is midwest district sales manager for Bohn Aluminum & Brass Corp. His territory is greater Chicago, northern Illinois, and Iowa.

Emil F. Peslar replaces R. S. Reade as vice president, manufacturing of American-Standard Industrial Div. Peslar was vice president and director of operations of York and Decatur works, York Div., Borg-Warner Corp.

John Huber becomes assistant director of sales for heating and

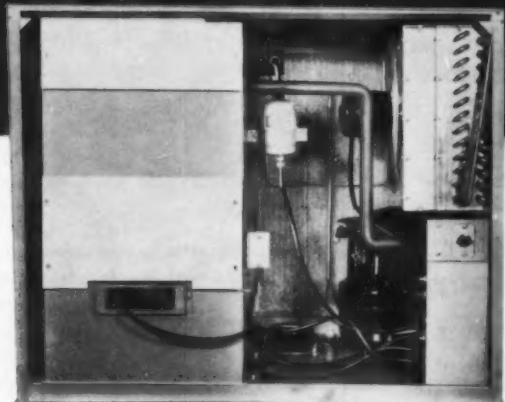
*Continued on page 76*



**FOUR EXECUTIVE PROMOTIONS** have been announced by Recold Corp. Accepting congratulations from president H. T. Jarvis (at right) is Daniel D. Wile, new executive vice president. Others newly promoted and their titles are (left to right) Ernie V. Jarvis, financial vice president; C. Milton Wilson, vice president, sales; and Carl Baumhofer, vice president, manufacturing.

# Crystal Tips ICE MAKERS

*simple design  
saves you...*



# MONEY

Ice-making section of Crystal Tips B-500 air cooled model. Notice how few parts are needed. Also remember this model will make more ice per day ( $\frac{1}{4}$  ton) than any other ice maker anywhere near its price or size. Service is seldom needed but when it is — it can be handled quickly — because all parts are easily accessible from the top of every Crystal Tips model.

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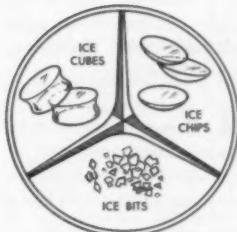


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# People ON THE MOVE

airconditioning division, Controls Co. of America. He was manager of the division's midwestern sales district. **Perry Cremeens**, a former sales engineer, replaces Huber.

**W. C. Conley** becomes president of the newly-formed Gibson Re-

frigerator Sales Corp., subsidiary of Hupp Corp. **Louis W. Hamper, Jr.**, becomes vice president.

New Chicago, Ill. sales representative for Warren Webster & Co., Inc. is **Maurice H. Hofmeister**. He was formerly airconditioning division general manager, Bell & Gossett Co.

**F. E. Myers & Bro. Co. Ltd.** appoints **J. F. Simmons** managing director, assistant treasurer, and

board member of Myers-Canada. He joins the firm after 30 years' service with Myers' home office, Ashland, Ohio.

**Herbert J. Zurstadt** joins engineering department, Detroit Controls Div. of American Radiator & Standard Sanitary Corp. as project engineer. He was a project engineer at Ranco Inc.

**R. L. Hagensick** moves up from assistant chief engineer to chief engineer of heating and airconditioning division, Modine Mfg. Co.

**Thomas W. Kirby** moves up from manager, special markets, to vice president, marketing, at Airtemp Div., Chrysler Corp.

New chief field engineer at Simpson Electric Co. is **Leroy E. Tice**.

**Larry Powell** takes charge of sales for Buffalo, N.Y., region for Lewin-Mathes Co. He's also industrial sales manager for Cleveland, Ohio, region.

**Pete Wing** is district representative for Milwaukee Electric Tool Corp. serving northern Illinois and part of Chicago.

**Warren E. Farwell** joins Trane Co. coil sales department.

Arka Air Conditioning Corp. appoints **K. Albert Mieg** as chief engineer and **Robert K. Spear** as assistant to vice president—engineering, research, and development.

**C. A. Olsen Mfg. Co.** appoints **Ronald W. Lindsay** as director of marketing. He leaves a similar position with Crane Co.'s plumbing, heating and air conditioning group.

**Robert S. Lehleitner** moves up from field sales engineer to sales manager of controls division, Jackes-Evans Mfg. Co.

**Lavern H. Brenneman** is new president and general manager of York-Shipley, Inc. He's been executive vice president of the firm since 1946.

Watsco hermetic terminal seals screw right over the original terminal post. No need to open the compressor. Can be installed in just 3 minutes right on the job — No special tools required — Packed 3 seals in a set.

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is the new popular Dero seal, part T-300B. Made of Delrin, the new duPont wonder material, the Dero seals are installed in the same manner as the Watsco Seals mentioned above — Each Dero Seal has its own electrical connector — The overall height is short enough to allow terminal cover replacement. Cannot short out — Fits almost every unit.

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What he means by air conditioning and what you mean by it are as far apart as the poles. He may be an "expert" but if you really want a full picture of the latest developments in air conditioning, you can do this best at the Heating & Air-Conditioning Exposition.

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THE REFRIGERATION & AIRCONDITIONING BUSINESS/JANUARY 1961

### TRAIN YOUR SERVICEMEN

Continued from page 52

"Now men have stopped talking about it. We don't know if it has just become so much a part of everyday living that the men don't feel the urge to talk or if the effect has worn off. We'll probably have Dr. Whitney back soon for more lectures."

**Design Engineering:** This course is designed for journeymen who show the most promise. A text book, "Air Conditioning and Refrigeration" by William H. Severns and Julian R. Fellows, is used for the course. Outside experts come in to lecture on individual chapters or groups of chapters within the book.

"We're training men to be able to talk intelligently with plant engineers and managers. At the same time they must be capable of doing the servicing necessary to wrap up the job," Ritchie says.

Training is nothing new at Boston Air Conditioning. It's been part of the picture for 18 years. The first 10 or 12 years, Ritchie says, schools were nothing more than lectures by manufacturer's representatives, who did nothing but talk about their products. The current triple-objective program started about five years ago.

Eighteen of the 30 servicemen started schooling at Boston Air Conditioning. The other 12 came to the firm when it bought out Legasse Refrigeration Co.

"We don't follow the accepted theory on training," says Ritchie. "Most companies like ours feel they should train men on just the equipment that they sell. Naturally our men are trained on our line of equipment, but we don't stop there.

"We try giving the servicemen the necessary education so they can handle all types and makes. We want our men to be good, sound refrigeration and airconditioning servicemen. The theory of refrigeration, airconditioning, electricity, and electric controls is drilled over and over.

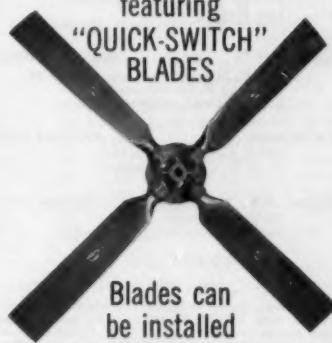
"In fact, one disadvantage of our comprehensive training is that we often lose men to other companies after we get them trained," concludes Ritchie.

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**Out-of-print issues of THE REFRIGERATION & AIRCONDITIONING BUSINESS** are available in complete volumes as positive microfilm copies from University Microfilms, 313 N. First Street, Ann Arbor, Michigan.

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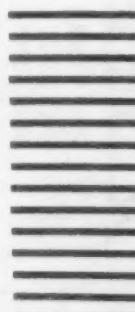
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*Anaconda American Brass Company*

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you sure it will do  
the trick?"**

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